

TECHNOLOGY

REVIEW

March 1958



technology review

Published by MIT

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Right off the Wire

A new system using multiple cathodes is said to double the life of the vapor lamps used on highways.

A thermionic converter has been made that produces electricity directly from heat with an efficiency of eight per cent.

Studies of the northern lights being made with a high-powered, long-range radar may disclose a method of defense against missiles coming over the arctic.

Submarine cable can be made in any length at the Simplex Submarine Cable Division's dock-side plant. Single lengths are limited only by the capacity of a cable ship's hold, or the length of a train of gondola cars.

An electronic system of bank record keeping handles randomized, unpunched paper checks at the rate of 1800 checks per hour to 40,000 accounts.

The world's largest solar furnace is being designed for installation in New Mexico. It will produce temperatures as high as 8,000°F.

Elimination of thermal noise by operating microwave amplifiers at the temperature of liquid helium has been found to greatly increase the range of radar.

An electronic map plotter is expected to make possible more accurate and cheaper maps from aerial photographs and to lend itself to the automation of mapping.

Plans are being made to mount telescopes on balloons in order to make observations above the interference of the earth's atmosphere.

The U. S. Air Force has patented an infrared television camera for use at night or in fog.

A new chemical plant will need no outside source of fuel after operation has begun. All the heat required will come from the process.

It has been found that one area of the human brain contains a record of every detail of the person's experience. Total recall can be produced by the stimulation of a minute electrical pulse.

Phosphors applied to textiles, sheet materials or metal mesh light up when a current is passed through them thus making draperies, for example, sources of illumination.

A new microscope for the study of living tissues uses bursts of ultraviolet light too brief (one thousandth of a second) to injure the tissue. The image appears in color on a television screen.

A new drug promises to save the lives of many persons who might otherwise die from lethal doses of radiation. It has been tried only on laboratory animals.

A form of fiber glass containing uranium 235 has been developed as a fuel for atomic furnaces.

A new amplifier is expected to extend the range of radio telescopes about ten times, enough to equal the best optical instruments.

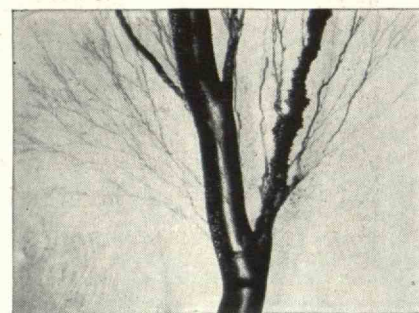
A giant air mattress, equipped with arresting and launching gear, has been patented for use as a portable airstrip. On it planes could make belly landings without damage.

Tellurium lead cable sheath has excellent vibration, creep and age-hardening resistance, and greater flex life and tensile strength than other lead alloys, say Simplex scientists after exhaustive tests.

A new meter for oil pipelines will measure a flow of 10,000 barrels per hour (four times the capacity of present equipment) with an accuracy of one tenth of one per cent.

Simplex C-L-X (Sealex) metallic sheath is manufactured with thermoplastic covering in colors for voltage or general industrial coding.

A device called an "electronic sentry" guards against fire, abnormal pressure, high or low water levels, temperature changes and other hazards. It calls a designated person by telephone and gives a pre-recorded message.



"Tree" of Knowledge

This strange looking growth tells an important story to the expert eyes of Simplex scientists. It's a Simplex photomicrograph showing "treeing" effect that results when a 15 KV polyethylene-insulated cable is broken down by 100,000 volts. This is typical of the continuing research work done at Simplex.

If you are interested in the important facts that Simplex scientists Kitchin and Pratt have discovered on polyethylene treeing, write for their AIEE Paper No. 58-121.

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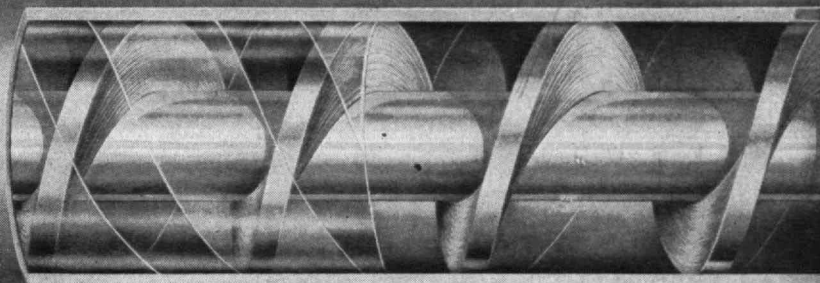
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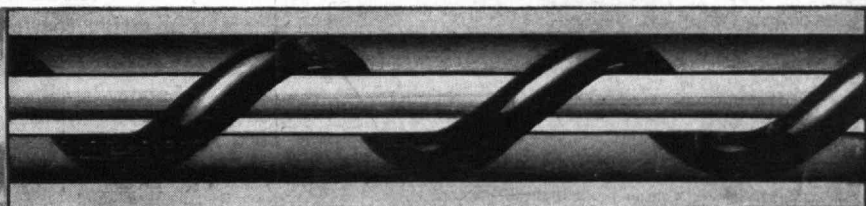
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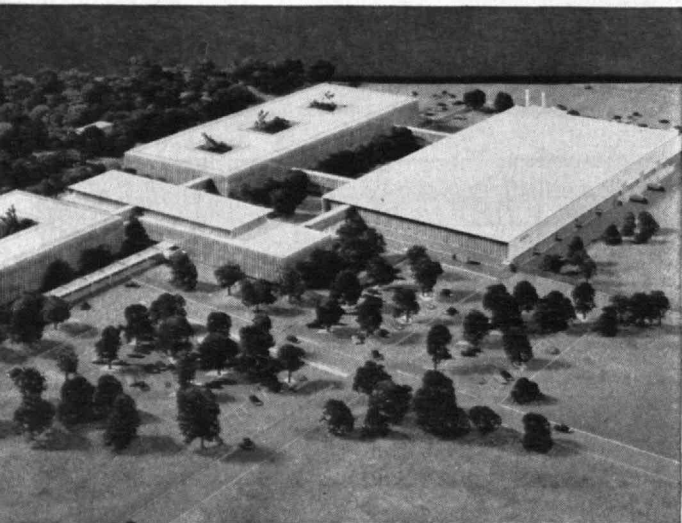


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Dennis W. Holdsworth



Pictured above is our new Research and Development Center now under construction in Wilmington, Massachusetts. Scheduled for completion this year, the ultramodern laboratory will house the scientific and technical staff of the Avco Research and Advanced Development Division.

Avco's new research division now offers unusual and exciting career opportunities for exceptionally qualified and forward-looking scientists and engineers.

Write to Dr. R. W. Johnston, Scientific and Technical Relations,
Avco Research and Advanced Development Division,
20 South Union Street, Lawrence, Massachusetts.

IDEALS AND PRACTICALITY

"Science and Philosophy mutually criticize each other and provide imaginative material for each other."... Alfred North Whitehead.

In the increasing preoccupation of science with material things and progress, the truth of this statement by one of our greatest philosophers is often overlooked and forgotten. The scientific philosopher is a rare being and is becoming rarer still, nor can he be adequately replaced by the group technique or the 'brainstorm' session.

It should be one of the noblest aspirations of all our sciences to provide for the true contemplation of the inner meaning of facts and to stimulate that interplay of mind on mind by which alone we may progress.

In all these things, however, we cannot forget the problems peculiar to research and development in private industry. The obligation to work to otherwise-determined time-scales poses a nice problem in balancing ideals against the practicalities of everyday life.

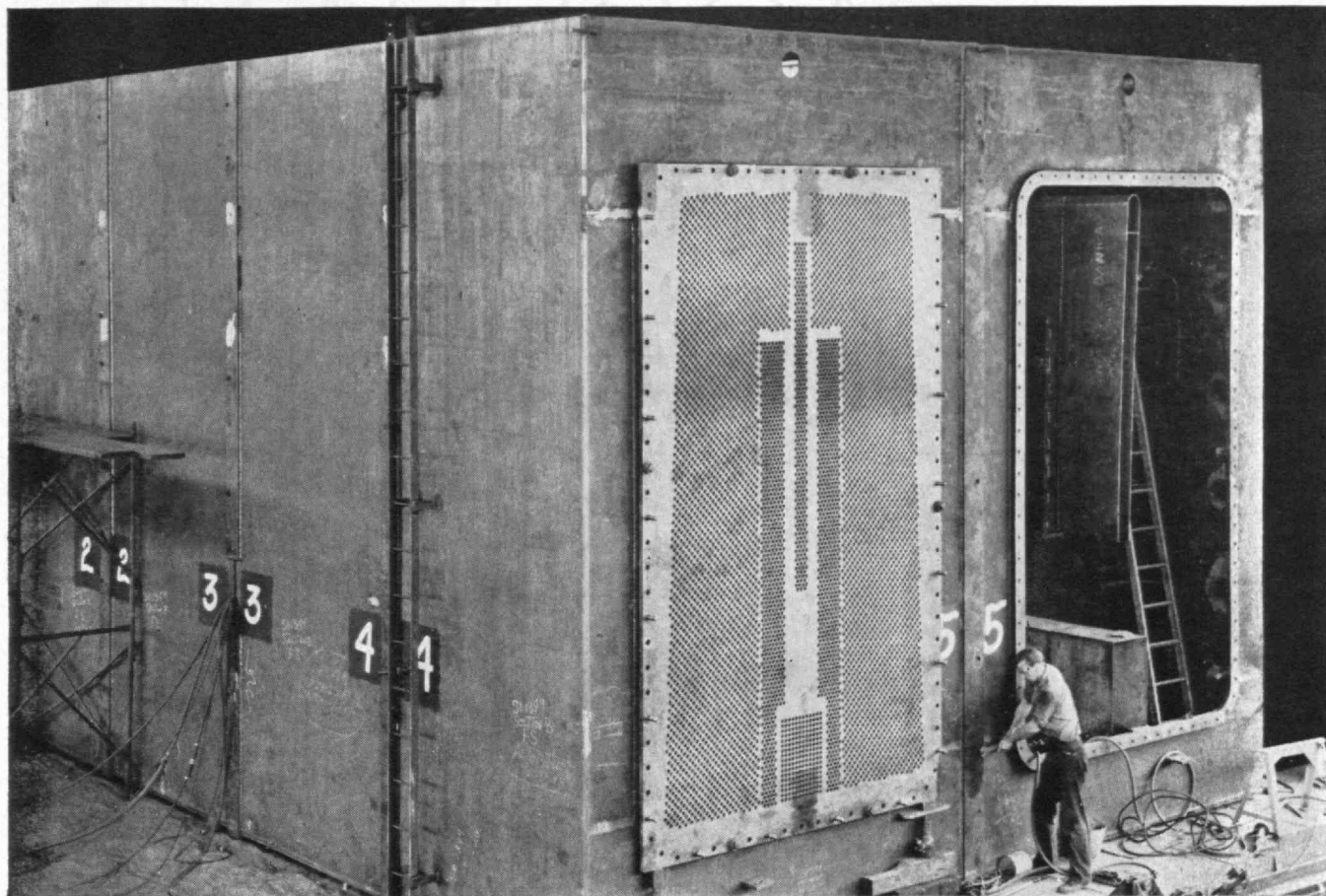
It is in this field that the test of management comes. Its success at meeting such continuously conflicting requirements determines the character and ultimate success of the organization.

With such thoughts as these in mind, we here at Research and Advanced Development Division of AVCO are seeking unique people. We wish to foster the creative minds and fundamental thinkers, while preserving an atmosphere of self-discipline, free from a rigid hierarchy of command and organization.

Dennis W. Holdsworth,
Manager, Computer and Electronic Systems Department

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Research & Advanced Development



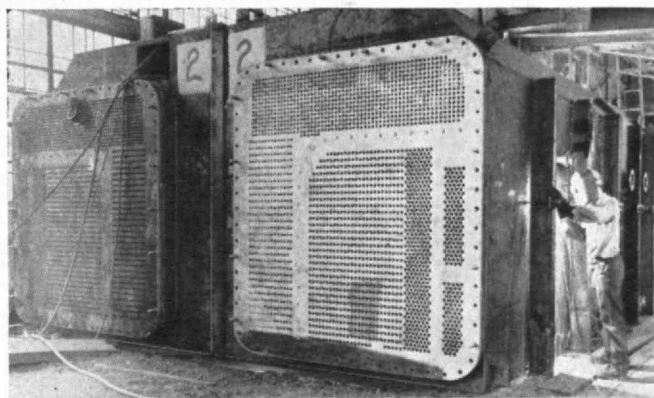
HERE'S ONE SHELL of this twin-shell, triple-lane unit just before shipment to Consolidated Edison's Astoria Station. It's designed to condense 1,600,000 lbs. steam/hr. at 1.87" Hg., with 244,000 gpm circulating water, and has 27,450 aluminum-brass tubes. Unit serves 335,000 kw turbine.

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VICE-PRESIDENTS LEE YETTER and Roy Driescher, and Chief Engineer Paul Hamm are responsible for the design and construction of all Wheeler condensers. They work with engineers employed by C. H. Wheeler's customers, with turbine manufacturers' engineers and consulting engineers in BTU chasing.



TYPICAL REVERSE FLOW CONDENSER is this 35,000 sq. ft. unit for a Southern electric utility. Patented Reverse Flow feature permits flushing debris from tubes with only slight (and momentary) vacuum loss. Note low height to save head room, rectangular cross section to further utilize space for this Wheeler client.

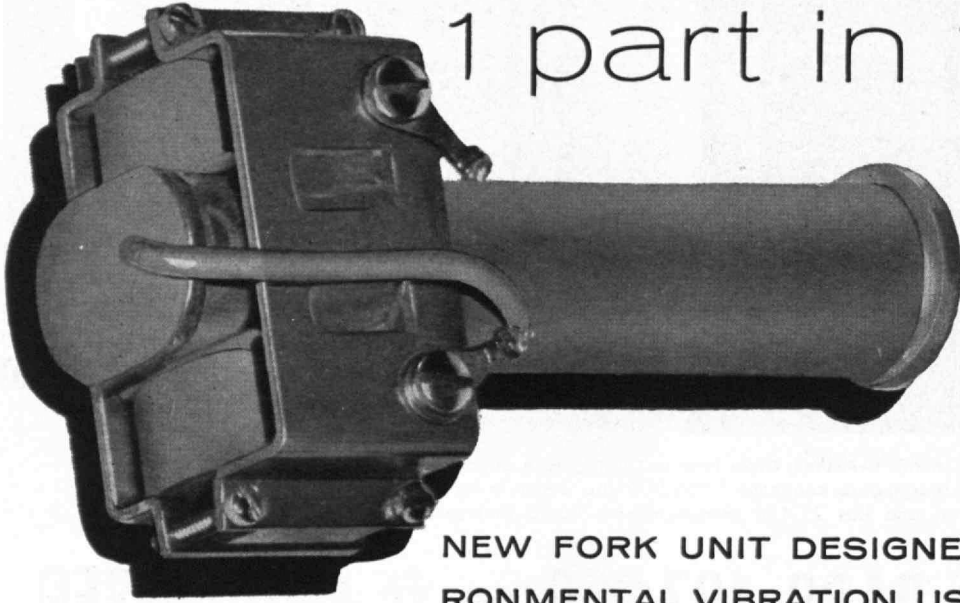
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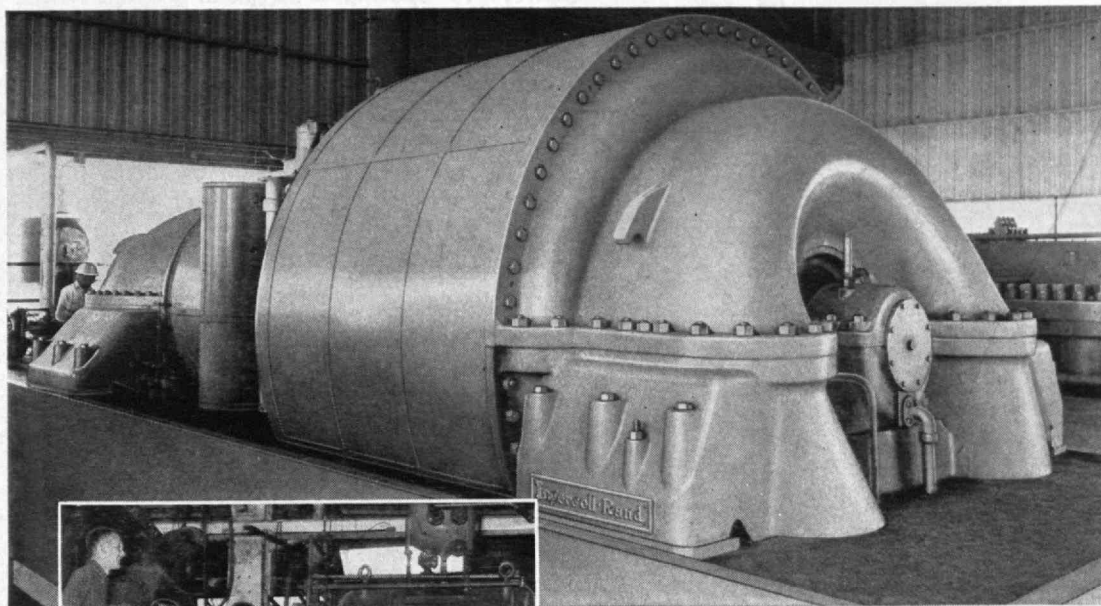


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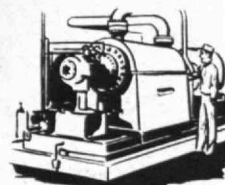
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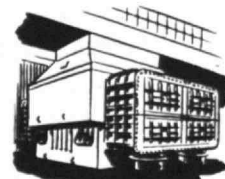
Centrifugal Pumps



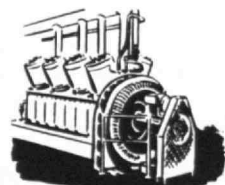
Rock Drills



Air & Electric Tools



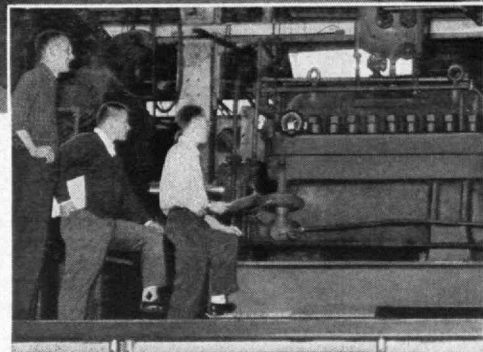
Steam Condensers



Diesel & Gas Engines

ABOVE: This huge I-R Turbo-Blower is the largest cat-cracking air blower ever built. It delivers 161,500 cfm of 30 psi air at Tidewater Oil Company's new Delaware refinery, and is driven by an 11,250 hp I-R steam turbine.

LEFT: Engineering trainees at Ingersoll-Rand's Phillipsburg, N. J., plant check final performance tests on another blower of smaller size and higher pressure.



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THE TABULAR VIEW

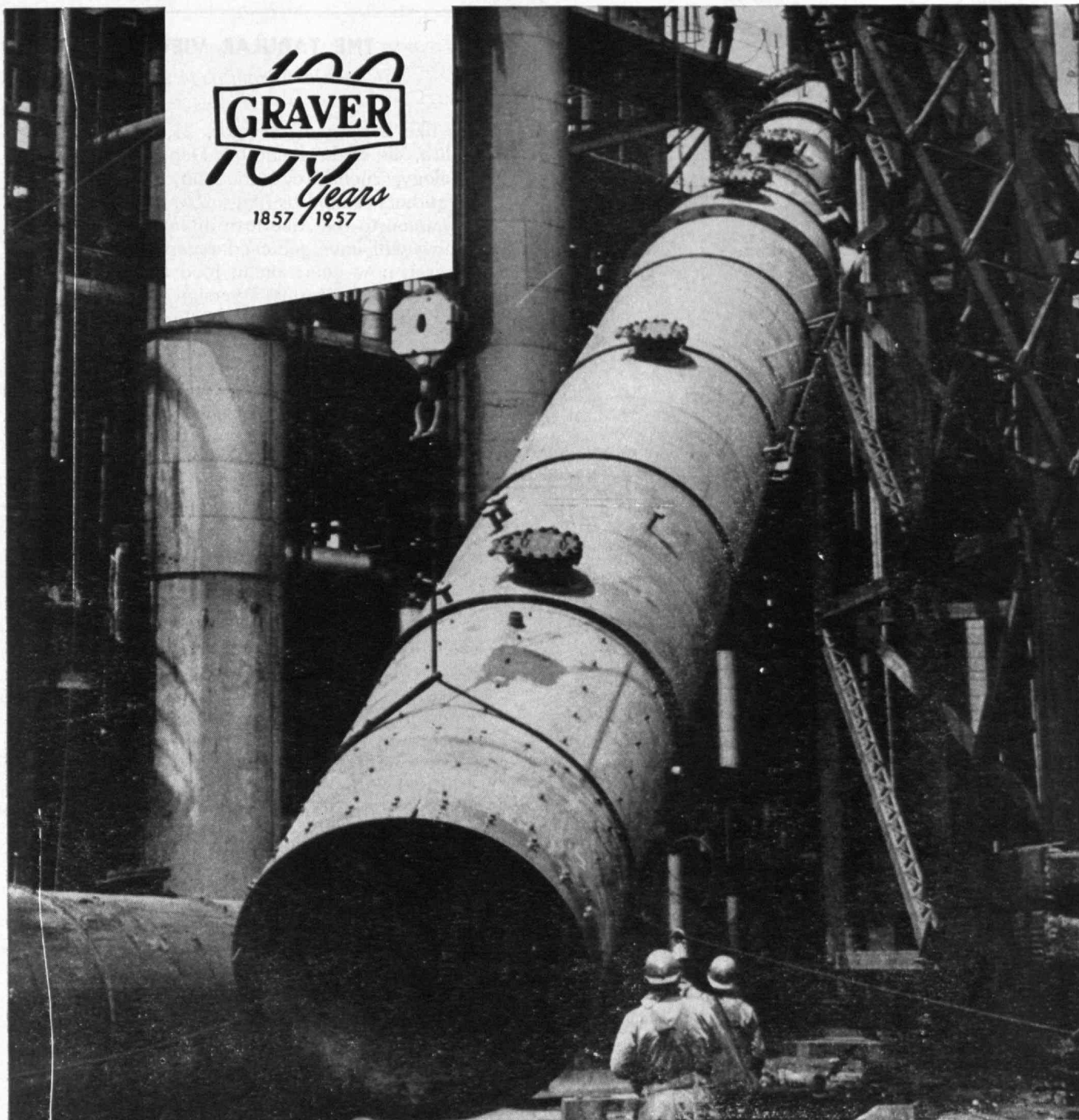
Answers to Sputnik? — Artificial earth satellites, whether placed in their orbits by the United States or by other nations, forcefully bring to our attention the need for developing this nation's scientific potential as completely as possible. One proposal for helping to achieve this aim is given (page 251) by ARTHUR R. VON HIPPEL, Professor of Electrophysics, who established, and is the director of, the Institute's Laboratory for Insulation Research. The work of this Laboratory cuts across many fields, such as physics, chemistry, mathematics, mechanical engineering, and electrical engineering, for example. It is not surprising, therefore, that Professor von Hippel proposes the establishment of federally sponsored university research centers, operating on a truly interdepartmental level, as a means of strengthening science for national defense. Professor von Hippel received the Ph.D. degree from the University of Göttingen in 1924, and was Rockefeller Fellow, University of California at Berkeley in 1927-1928. He taught at the University of Jena (1928-1929), the University of Göttingen (1929-1933), the University of Istanbul (1933-1934), and the University of Copenhagen 1935-1936).

Dignity of Individual. — The mass-production techniques of the Twentieth Century, and the co-operative teamwork which is thereby entailed, leaves little time — and perhaps less interest — to examine critically the role of the individual in today's society. In his essay on "The Dignity of the Individual in the Twentieth Century" (page 253), JOHN B. WILBUR, '26, Professor of Civil Engineering, expresses concern for the effect of technological progress on the dignity of the individual. The most meaningful province of private enterprise is universal moral discipline, concludes Professor Wilbur, who adds that members of a free society can — and will — give their devotion to the common cause. Professor Wilbur received the S.B., S.M., and Sc.D degrees from M.I.T. in 1926, 1928, and 1933, respectively. He was assistant in the Department of Civil Engineering between 1926 and 1928, and then joined the engineering staff of the Maine Central Railroad Company. From 1929 to 1930, he was bridge designer for the New York Central Railroad Company. In 1930, Dr. Wilbur returned to M.I.T. as instructor in Civil Engineering. He was made assistant professor in 1934, associate professor in 1937, and professor of structural engineering in 1943. In 1946 he was made head of the Department of Civil and Sanitary Engineering, after having served for two years as its acting head. In addition to his professional achievements, Dr. Wilbur is perhaps best known, at least among Technology Alumni, for his composition "Sons of M.I.T."

Tomorrow's Table. — What will America's increasing population be having for dinner a decade or two hence? The nonspecialists in foods may have a difficult time answering this question. But to food spe-

(Concluded on page 236)

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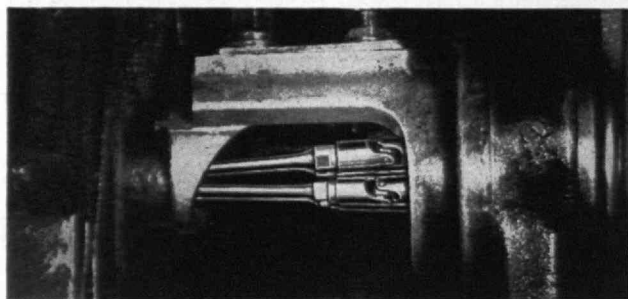
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THE TABULAR VIEW

(Concluded from page 234)

cialists like Bernard E. Proctor, '23, and Samuel A. Goldblith, '40, of the Institute's Department of Food Technology, such prognostication is not difficult. These authors remind us (page 255) that many products common to the American dining table 10 years from now will have achieved acceptability because of research now going on in food technology. The Review article is a printed version of a paper presented at the Conference on New Directions in Food Marketing, held at the School of Retailing, University of Pittsburgh, on April 5, 1957.

Professor Proctor received the S.B. and Ph.D. degrees from M.I.T. in 1923 and 1927, respectively. Between 1923 and 1926 he was an instructor in biochemistry in the School of Medicine, Boston University. Since 1926 he has been a member of the M.I.T. staff: first as assistant and instructor, and later as a member of the Institute's Faculty. He became professor of food technology in 1944, and the following year became director of the Samuel Cate Prescott Laboratories of Food Technology. Since 1952 he has been head of the Department of Food Technology. He is author of many technical papers and, with Samuel C. Prescott, '94, wrote *Food Technology*, published by the McGraw-Hill Book Company, Inc.

Professor Goldblith received the S.B., S.M., and Ph.D. degrees from M.I.T. in 1940, 1947, and 1949, respectively. He was a member of the staff of Arthur D. Little, Inc. in 1940-1941, and served with the United States Army from 1941 to 1946. He joined the M.I.T. staff as a research associate in 1949, was made assistant professor of food technology in 1952, associate professor in 1955, and became executive officer of the Department of Food Technology also in 1955. He is the author of numerous articles in professional journals in the field of nutrition, and is associate editor of *Food Technology*.



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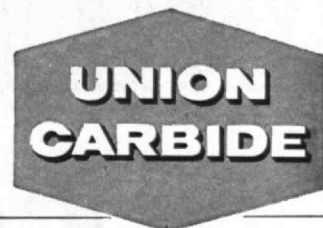
THESE TWO LIQUIDS flow as freely as water. Yet when poured together they quickly turn into a solid—without the use of heat or pressure. Harder than many metals, the resulting plastic is called epoxy.

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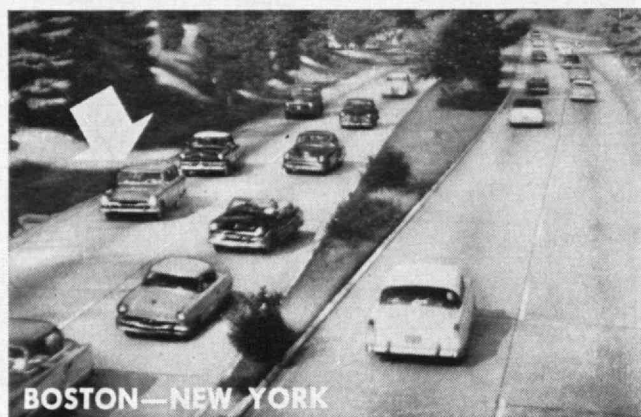
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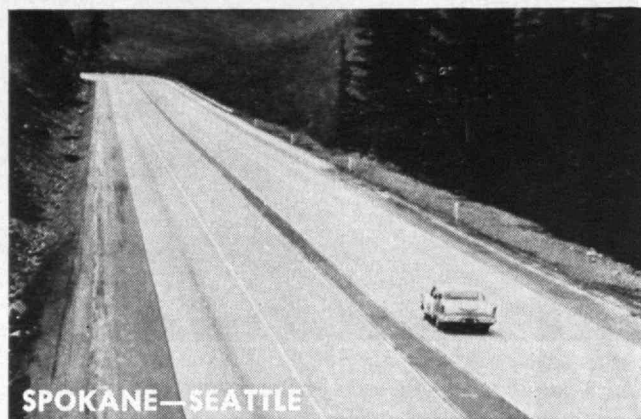
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THE TECHNOLOGY REVIEW

EDITED AT THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

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Vol. 60, No. 5

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Palace in ancient Thebes,
Upper Egypt on the Nile.

Photograph by
Kenneth E. Bell, '17



" . . . Let me court the rivers and forests."

— Virgil

North Fork, Shoshone River, east of Yellowstone Park — camera view by F. S. Lincoln, '22



The Trend of Affairs

Getting Out the Vote

■ In keeping with American tradition, the elective process will go into operation this spring as Technology Alumni mark their ballots for officers of the M.I.T. Alumni Association, alumni term members to serve on the Institute's Corporation, members of the National Nominating Committee, and (for classes whose numerals end in four or nine) class representatives to serve on the Alumni Council. Ballots calling for the election of these officers will be put into the mail on March 24, will be counted on April 25, and the results of the election will be announced in the June, 1958, issue of *The Review*.

Nominated to serve as president of the M.I.T. Alumni Association for one year beginning July 1,

1958, is John J. Wilson, '29, XV, Director of the Minneapolis-Honeywell Regulator Company. Other posts and achievements of this distinguished Alumnus are recorded in the legend of Mr. Wilson's portrait.

Nominated to serve as a vice-president for a two-year term beginning July 1, 1958, is William W. Garth, Jr., '36, XV. Mr. Garth is president and treasurer of Photon, Inc., as well as president, treasurer, and director of the International Photon Corporation, and Graphic Arts Research Foundation, Inc., developers of photographic methods for setting type. Mr. Garth is a director of Baird-Atomic, Inc., Chemical Products Corporation, and Imtra Corporation. He is a member of the corporation of Northeastern University, the Museum of Science, and the Home Savings Bank of Boston. He has been active in alumni activi-

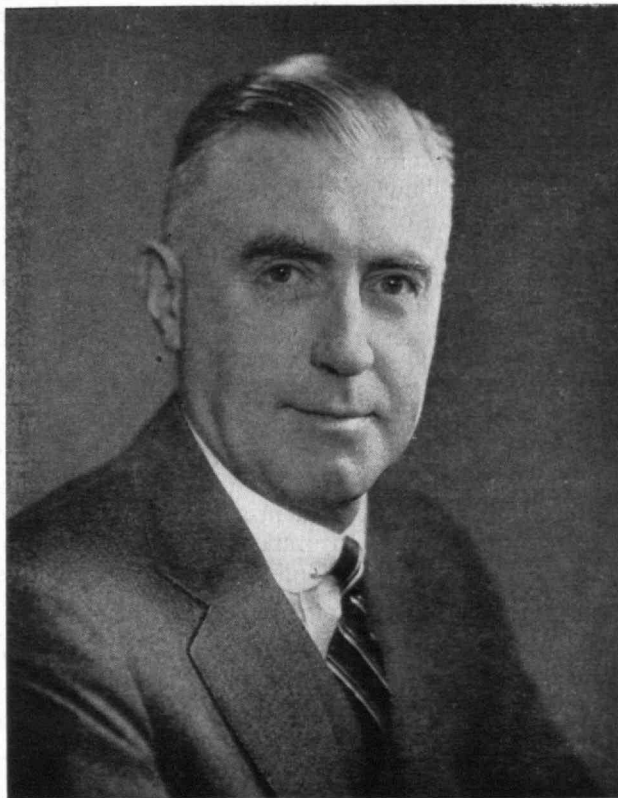
Fabian Bachrach

1958-1959 Presidential Nominee . . .

John J. Wilson, '29, XV, heads the ballot of the Alumni Association for officers whose terms begin on July 1, 1958. Mr. Wilson at present is director of the Minneapolis-Honeywell Regulator Company; in 1954-1957, he was vice-president of this company. He had had previous executive experience as president and director of Doelcam Corporation in 1945-1955 and of Datamatic Corporation in 1955-1956. Also, from 1941 to 1945, he was general purchasing agent for the Sperry Gyroscope Company.

Notwithstanding the claims of industry on his time, he has maintained a keen interest in affairs of the Institute and the Association, serving as vice-president of the Alumni Association during 1955-1957. Mr. Wilson has been a member of the Alumni Council since 1950 and Class Agent since 1951. In 1949 he served as chairman of the 20th Reunion for the Class of 1929, and over the years has been chairman and member of numerous Association committees, as well as chairman of the First Alumni Officers' Conference in 1955 and of the M.I.T. Centennial Committee, 1956-1957. In 1955-1957 he was a member of the Alumni Fund Board.

A civic interest is the Children's Hospital in Boston, of which he is a corporation member. Mr. Wilson is a director of: the Second Bank-State Street Trust Company, Boston; Forbes Lithograph Company, Chelsea; Associated Industries of Massachusetts; Greater Boston Chamber of Commerce; and the Skating Club of Boston. He is a member of the M.I.T. Faculty Club, Algonquin Club, St. Botolph Club, Brae Burn Country Club, Minneapolis Club, Cruising Club of America, Eastern Yacht Club in Marblehead, and the Cat Key Club, B.W.I.





Douglas Aircraft Company, Inc.

Moffett, Chicago

Nominees for alumni term membership on the Institute's Corporation, each to serve for a term of five years, are (from left to right): Donald W. Douglas, '14, Chairman of the Board and President, Douglas Aircraft Company, Inc., Santa Monica, Calif.; Robert C. Gunness, '34, Executive Vice-president, Standard Oil Company (Indiana); and Gilbert M. Roddy, '31, President and Director, Boston Manufacturers Mutual Insurance Company, and President and Director, Mutual Boiler and Machinery Insurance Company, Waltham, Mass.

ties for many years. He has represented the Class of 1936 on the Alumni Council since 1946; was secretary of his Class from 1947 to 1950; and class agent, 1946-1951. He was a member of the Executive Committee, 1950-1952, and member of the Alumni Fund Board, 1953-1957. He also was a member of the Alumni Council, representing various M.I.T. clubs in 1937-1938, and again from 1943-1946; Friends of the M.I.T. Library Committee, 1946-1953; Personnel Committee, 1946-1950; Advisory Council on Athletics, 1946-1948; Advisory Council on Undergraduate Government, 1949-1952; Alumni Day Committee, 1950-1951; Library Departmental Visiting Committee, 1950-1954; chairman, Midwinter Meeting Committee, 1951-1952; and member of the Committee on Nominations for Departmental Visiting Committees, 1954-1957. Mr. Garth is a member of the St. Botolph Club (Boston), University Club (New York), and the Concord Country Club.

Nominated to serve on the Executive Committee of the Association for a two-year term beginning July 1, 1958, are the following two Alumni: F. Leroy Foster, '25, III, Director of the M.I.T. Division of Sponsored Research; and Philip H. Peters, '37, VI-A, Vice-president of the John Hancock Mutual Life Insurance Company, Boston.

Nominated to serve for five-year terms, as alumni term members on the M.I.T. Corporation, are: Donald W. Douglas, '14, II, Chairman of the Board and President, Douglas Aircraft Company, Inc., Santa Monica, Calif.; Gilbert M. Roddy, '31, XV, President and Director, Boston Manufacturers Mutual Insurance Company, and President and Director, Mutual Boiler and Machinery Insurance Company, Waltham, Mass.; and Robert C. Gunness, '34, X, Executive Vice-president, Standard Oil Company (Indiana).

The membership of the National Nominating Committee at present is comprised of: Horatio L. Bond, '23, chairman, Robert C. Erb, '17, Edmund D. Ayres, '22, Clayton D. Grover, '22, Cecil H. Green, '23, Max L. Ilfeld, '24, Ralph B. Johnson, '27, Bissell Alderman, '35, Harold Chestnut, '39, and Henry Avery, '41.

Nominations for members of the National Nominating Committee (with one Alumnus to be elected from each of the following districts for a term of three years) are: *District 1* — Boston, Mass. — John A. Lunn, '17, II; *District 2* — Portland, Maine — Robert B. Follansbee, '32, I; Montreal, Que. — Jean M. Raymond, '34, XV; *District 4* — Schenectady, N.Y. — Philip L. Alger, '15, VI; Syracuse, N.Y. — Edwin A. Gruppe, '22, XIV; Rochester, N.Y. — Van Buren N. Hansford, '37, II; Toronto, Ont. — Maxwell C. Coutts, '39, XV; *District 5* — Newark, N.J. — Everett W. Vilett, '22, VI; New York City — Hartselle D. Kinsey, '24, X-A.

Lecture on Nuclear Reactor

■ Plans for operation of the nuclear reactor now nearing completion at the Institute were described in a lecture given three times (on the week-end of January 17) at M.I.T. by Theos J. Thompson, Associate Professor of Nuclear Engineering. The lecture was presented for the general public on Sunday afternoon, January 19, in Compton Hall of the new Karl Taylor Compton Laboratories. It was heard on January 17 and 18 by high school students.

Professor Thompson, who designed the reactor and has been director of its construction, showed slides explaining the fission process and the method by which it will be used in the reactor for research and experimental purposes in such fields as physics, medicine, chemistry and food technology. The reactor will be used for various purposes, among them, the study of nuclear fission; training of nuclear engineers; medical studies in the use of neutron beams for the treatment of disease, such as brain tumors; experiments in the sterilization of foods and medical supplies; experiments in improving the characteristics of materials; and studies of mechanical wear.

Before coming to the M.I.T. Faculty in 1955, Dr. Thompson served as a physicist at the Los Alamos Scientific Laboratory, where he worked on design and construction of the Omega West Reactor.

Council Views Educational TV

■ Activities of one of America's outstanding educational television stations, WGBH, were on the program of the first meeting of the Alumni Council for the calendar year 1958. Gilbert M. Roddy, '31, President of the Alumni Association, presided at this meeting (the 328th of this august body) on the evening of January 6 in the M.I.T. Faculty Club where 174 members and guests were present to consider the affairs of the Association, and to hear a discussion of M.I.T.'s participation in the Lowell Institute Co-operative Broadcasting Council, which operates Station WGBH on Channel 2 in Boston.

As Secretary of the Association, Donald P. Severance, '38, reported changes in class affiliation for two Alumni, and visits to 13 local clubs and to one M.I.T. regional conference by 21 members of the Council and of the Institute staff.

To date, results of the election of chairmen and committee members for Alumni Day, 1958, scheduled for Monday, June 16, are as follows: *Registration* — Wolcott A. Hokanson, staff, chairman, Robert E. Hewes, '43, G. Edward Nealand, '32; *Morning Conference* — James Donovan, '28, chairman, Samuel C. Prescott, '94, Eugene R. Smoley, '19, Arthur A. Nichols, '28, William C. Rousseau, '36, Louis Rosenblum, '42, Mrs. Karl T. Compton; *Luncheon* — Albert O. Wilson, Jr., '38, chairman, Waldo F. Pike, '15, Winthrop F. Potter, '22, Robert C. Dean, '26, William H. Carlisle, Jr., '28, Felix J. Conti, '34, C. Vincent Vappi, '48; *Afternoon* — Allen Latham, Jr., '30, chairman; *Banquet* — Philip H. Peters, '37.

Vincent T. Estabrook, '36, chairman of the Midwinter Meeting Committee, reported briefly on plans for the meeting to be held on February 4. Alumni were encouraged to bring as guests their school superintendents, principals, physics teachers, and school board members so that they could become acquainted with the work of the Physical Science Study Committee which would be demonstrated. This committee is developing new curricula, books, films, and experiments for the teaching of high school physics. (Please see page 250 for the report of the Midwinter meeting.)

Included in the remarks of Joseph E. Conrad, Regional Director of the Alumni Fund, was the report that participation in the Fund by Alumni Council members stands at 66 per cent; and that 7,125 Alumni have contributed \$214,710 as compared to \$206,603 given by 6,627 contributors for last year at the same time. Mr. Conrad also spoke of the regional personal solicitations to take place in 151 localities. In communities throughout the country, 2,000 solicitors will make personal calls for the Alumni Fund. Proved to be quite successful was the Class Special Gifts Solicitation Program which had been introduced this year on an experimental basis.

After the business meeting, Hartford N. Gunn, Jr., General Manager of WGBH, spoke on the collaboration of Station WGBH and M.I.T. in undertaking wider dissemination of information and knowledge. He cited as specific examples the program, Science Reporter, in which Volta Torrey, M.I.T.'s Director of Television, is host to distinguished men of science, presenting the goal and influence of science in the

On the Horizon

March 13-15, 1958 — 10th Annual Fiesta, M.I.T. Club of Mexico, Mexico City, D.F. (For reservations, consult Clarence M. Cornish, '24, Margaritas 139, Villa Obregon, Mexico 20, D.F., Mexico.)

April 1, 1958 — President's Dinner, M.I.T. Club of Chicago. (For reservations, consult Robert C. Meissner, '43, John F. Meissner Engineers, Inc., 308 West Washington Street, Chicago 6, Ill.)

April 12, 1958 — Spring Dinner, M.I.T. Club of Philadelphia, Longwood Gardens, Kennett Square, Pa. (For reservations, consult Samuel K. McCauley, '41, P. O. Box 298, Upper Darby, Pa.)

June 16, 1958 — 24th Alumni Day, 1958, M.I.T. Campus in Cambridge.

November 8, 1958 — 13th M.I.T. Alumni Regional Conference, Albuquerque, N.M.

Twentieth Century; programs designed to examine before the television cameras the specific areas of scientific knowledge in which the particular scientist is most knowledgeable. The Lowell Institute Co-operative Broadcasting Council is so confident of the success of the Science Reporter programs that it is seeking additional support from business and foundations to distribute kinescope recordings of these programs each week to more than 30 educational television stations throughout the United States whose weekly audience is 12,000,000 or more.

Of the many facets of television programming disclosed by Mr. Gunn, perhaps the most startling concerned the recent North Atlantic Treaty Organization Conference. To the best of his knowledge, not one radio or television program in the United States, either on the great network or on local radio and television stations, presented a comprehensive report on what N.A.T.O. is, why a N.A.T.O. Conference was called, what was to be discussed, and how to interpret the outcome of the conference. The only exception that he could find was a program on WGBH-TV given the day preceding the N.A.T.O. Conference when it presented Professor Walt W. Rostow, M.I.T. Professor of History, and Professor Lincoln Gordon of Harvard with Henry Morgenthau, 3d, of the station in a clear and concise discussion of the N.A.T.O. Conference.

After Mr. Gunn's remarks, the Council viewed a 25-minute motion picture of a Science Reporter telecast by WGBH which took place immediately after the Russians launched their second satellite. In this program, Arthur R. Kantrowitz, Visiting Institute Professor, told how a dog or a man could be brought back alive from space, and described the shock tube used in his laboratory in connection with research in magnetohydrodynamics.

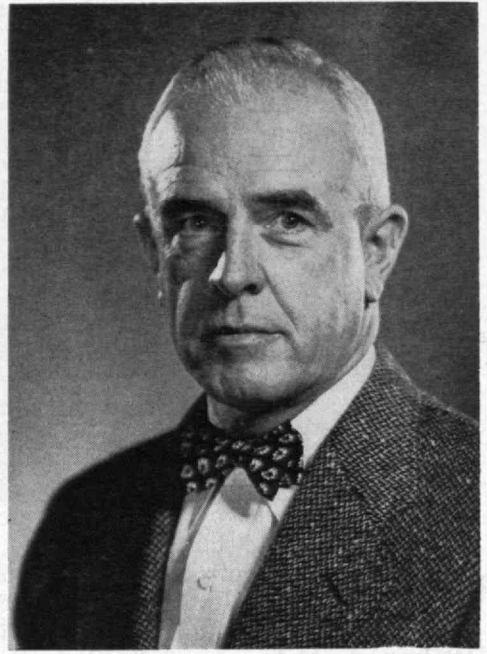
In conclusion of the meeting, Dr. Kantrowitz was interviewed in person, first by Mr. Torrey, and then by members of the Alumni Council during a question period.

Course XIV Head



◀ **Robert L. Bishop**
*Head, Department of
Economics and Social
Science*

Ralph E. Freeman ▶
Professor of Economics



M.I.T. Photo

M.I.T. Photo

Heads Course XIV

■ Appointment of Robert L. Bishop as Head of the Department of Economics and Social Science at the Institute was announced recently by Chancellor J. A. Stratton, '23, Acting President. Dr. Bishop succeeds Ralph E. Freeman, who will continue as a professor of economics.

"Professor Freeman has served with distinction since 1934 as Head of a Department which had its beginning in the early days of the Institute and which during his administration became widely recognized for its teaching and research," said John E. Burchard, '23, Dean of the School of Humanities and Social Studies, of which the Department is a unit. "We are happy that he is to be succeeded by an economist of such stature as Professor Bishop," Dean Burchard remarked.

Professor Bishop received bachelor's, master's, and doctor's degrees from Harvard University and was an instructor and tutor in economics at Harvard for three years. He became an instructor in economics at M.I.T. in 1942, an associate professor in 1950, and a professor last summer. His special field is economic theory, and he has been a consultant for industrial concerns in the textile, automotive, and glass fields.

Professor Freeman, a native of Canada, served in the Royal Artillery during World War I. He studied at McMaster University and the University of Chicago and was a Rhodes scholar at Oxford University. For several years he was in private business and a member of the faculty of the University of Western Ontario. He joined the M.I.T. Faculty in 1931 and became head of the Department of Economics and Social Science in 1934.

Willis R. Whitney: 1868–1958

■ Willis R. Whitney, '90, former director of the General Electric Research Laboratory, Emeritus Professor of Chemical Research at M.I.T., and an Emeritus Life Member of the M.I.T. Corporation, died in Schenectady, N.Y., on January 9. He was 89 years old.

Dr. Whitney was considered the dean of industrial research in this country. His work as founder and developer of the General Electric Research Laboratory set the pattern for industrial scientific laboratory research work throughout the United States. His personal achievements as a chemist, inventor, educator, and engineer were important, but in addition, scientists working under Dr. Whitney developed the modern electric light bulb and did significant work in such fields as x-rays, radio, television, large turbine generators, and submarine detection. Dr. Whitney directed the Research Laboratory in Schenectady from 1900 until 1932, when he retired from the laboratory. He continued active service with the General Electric Company as vice-president in charge of research, and in 1941 became an honorary vice-presi-

dent and also consultant on research to the company.

Awarded his S.B. by M.I.T. in 1890 and his Ph.D. by the University of Leipzig, Germany, in 1896, Dr. Whitney joined the M.I.T. teaching staff in 1890 and held a nonresident professorship after 1904. He was elected a term member of the Institute's Corporation in 1917 and 1923, and served as life member from 1938 until 1954.

Honored many times, Dr. Whitney held five honorary degrees and received the Willard Gibbs Medal of the American Chemical Society in 1916, the Chandler Medal of Columbia University in 1920, the Perkin Medal of the American Section of the Society of Chemical Industry in 1921, the Franklin Medal in 1931, the Edison Medal in 1935, the Public Welfare Medal of the National Academy of Sciences in 1938, the John Fritz Medal in 1943, and the Medal of the Industrial Research Institute in 1946. He was made a Chevalier of the Legion of Honor of France in 1937, and was a member of the National Academy of Sciences, past-president of the American Chemical Society, and past-president of the American Electrochemical Society.

Educational Council Secretary

■ The appointment of D. Hugh Darden as Executive Secretary of the M.I.T. Educational Council was recently announced by J. A. Stratton, '23, Acting President. Formerly Assistant Director of Admissions at New York University, Mr. Darden will also have the additional title of Assistant Director of Admissions at M.I.T.

The Educational Council, which Mr. Darden now heads, is composed of about 700 M.I.T. Alumni who maintain liaison between the Institute and more than 1,000 secondary schools throughout the United States. The primary functions of the council members are to keep schools informed of educational developments at M.I.T., to advise students on educational opportunities in science and engineering, and to interview candidates for admission to M.I.T.

Since 1954 Mr. Darden has been with the Admissions Office at N.Y.U. where he was responsible for admissions to the school of engineering. He was also a Penfield Fellow in History at N.Y.U. from 1952 to 1954 and served as an instructor in history there during 1952-1953 and 1956-1957.

In World War II he served with the U.S. Army in Europe where he won a battlefield commission as a second lieutenant and received four campaign stars. Following the war he became a graduate teaching fellow at the University of Alabama (1946-1949) and later (1949-1952) an assistant professor of history at the state teachers college at Florence, Ala.

Born in 1922 in Lanett, Ala., he was educated in the public schools of West Point, Ga., and received the degrees of bachelor of arts (1943), bachelor of laws (1948), and master of arts (1949) from the University of Alabama.

Twenty-five Years Ago This Month . . .

■ The tides of the Atlantic Ocean were reproduced in an Institute laboratory, and made to ebb and flow at the will of Kenneth C. Reynolds, '25, and John B. Drisko, '27, who were engaged in studying their behavior in a model of the Cape Cod Canal.

As it then existed, the Canal, owned by the government, was a one-way sea-level waterway 100 feet wide and 25 feet deep, with a total length of about 7.5 miles. Under contemplated plans, it would be widened to 250 feet and dredged to a maximum depth of 30 feet, and have a lock to control the currents and make transit safe for all vessels.

Some idea of the complex problems involved in the investigation is indicated by the fact that the average rise and fall of the tide in Cape Cod Bay is five feet greater than in Buzzards Bay; and the tide time difference is three hours between the bays. Hence, the tide is rising in Buzzards Bay while it is falling in Cape Cod Bay. Under extraordinary conditions of flood tide driven by high winds, maximum differences in level of nine feet may occur between the bays. At high tide in Cape Cod Bay the water rushes southward to the lower level of Buzzards Bay; six hours later the current reverses and flows swiftly northward.

The laboratory model, in length 41.5 feet, was built to a scale of approximately 5.5 feet to one mile. It

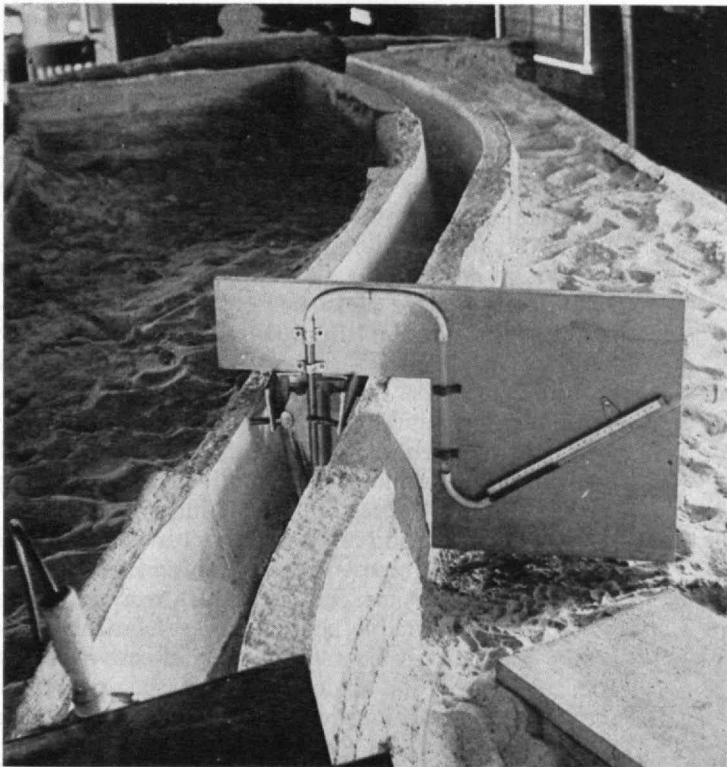
was constructed of concrete blocks to form a channel accurately reproducing the curving path of the Canal across the Cape. In its operation, time as well as size was reduced, for the complete cycle taking in nature approximately 12 hours was shortened in the model to a few minutes.*

■ Congratulations were being extended to *Francis R. Hart*, '89, upon his election to the Presidency of the United Fruit Company; . . . to *James Reed*, '07, named as General Manager of the Golden Gate Bridge and Highway District, California; . . . to *Robert E. Wilson*, '16, upon becoming Vice-president in charge of research, Standard Oil Company of Indiana;

To *Royal Barry Wills*, '18, upon being presented by President Hoover with the Gold Medal for the best small-house design submitted in the 1932 national competition sponsored by Better Homes in America;

To *Niazi I. Mostafa*, '33, upon winning the New England Intercollegiate wrestling title in the 155-pound class; . . . and to *Richard Bell*, '34, who had set a new intercollegiate record of seven seconds flat for the 70-yard dash, which equaled the world's record for that distance established by Loren Murchison in 1923.

*Two years later, in the spring of 1935, a larger 115-foot model was constructed to simulate conditions in the Canal if then contemplated plans were carried out — widening to 700 feet and dredging to a depth of 40 feet, thus causing an anticipated tidal flow of 75,000,000 gallons per minute compared with the existing estimated flow of 13,500,000 gallons per minute. This larger model was housed in "Building 20," a supposedly temporary, wooden relic of World War I, which was ultimately demolished in the summer of 1941.



M.I.T. Photo

A section of the 41.5-foot model of the Cape Cod Canal built in 1933 in the Institute's River Hydraulic Laboratory. The instrument, shown in the channel of the model, recorded changes in the water level accompanying the rise and fall of the tides as they occurred in the actual Canal.

Citation for Radio Education

■ Ralph Lowell, Trustee of the Lowell Institute, member of the M.I.T. Corporation, and pioneer leader in educational broadcasting, was awarded the annual citation of the New England District, American College Public Relations Association. The presentation was made on January 10 at the banquet of the A.C.P.R.A. New England district convention, meeting at the Institute.

The citation, which was presented by Miss Jean Glasscock, Director of Publicity at Wellesley College, described Mr. Lowell as one who "has summoned the vacuum tube to the service of education, extending the excitement of new ideas and the pleasure of learning from the lyceum halls of his grandfather's time into the homes of Boston and far up the Connecticut Valley.

"A banker by calling and a scholar at heart, he has kept a watchful guard over the quality that marks New England education, giving counsel and leadership to many institutions, and encouragement to all."

Mr. Lowell, who is president of the Boston Safe Deposit and Trust Company, was largely responsible for the formation in 1947 of the Lowell Institute Co-operative Broadcasting Council. The council now operates the only educational station in the country with both TV and FM broadcasting—WGBH-TV and WGBH-FM. Mr. Lowell is president of the WGBH Educational Foundation.

He is also a member of the Corporation of the Institute and of Northeastern University, a trustee of Boston University, and president of the Board of Overseers of Harvard University.

Soil Stabilization

■ Substantial and lasting improvements in the load-bearing capacity of the soil have important applications where the earth is usable as a load-supporting structure. Thus, "soil solidification," as it is commonly called, has important potential utility in the construction of highways, air strips, and dams, in the preparation of building foundations, and in the fabrication of earth housing. Because of its practical value, considerable effort has been expended on research for soil stabilizers that are economically feasible while simultaneously fulfilling the physical requirements of a specific application.

A solidifier suitable for use in preparing highway subgrades must be competitive in cost with that of excavating and removing existing soil and replacing it with suitable aggregate, and it must also lend itself to incorporation in the soil with conventional road-building equipment. For the construction of military air strips or emergency highways, on the other hand, a suitable solidifier might be relatively costly, but it must be rapid-acting, effective in low concentrations, and incorporable with soil under unfavorable conditions with lightweight processing equipment.

Recent research undertaken at the Institute's Soil Stabilization Laboratory by Alan S. Michaels, '44, Associate Professor of Chemical Engineering, with Peter M. Williams, '57, and Kendall B. Randolph, '56, research assistants in the Department of Chemi-

cal Engineering, was directed toward the development of chemical soil solidifiers for use in fine-grained soils of relatively high clay content. Such soils are often encountered in practice; while cohesive and strong in the dry state, they become weak and plastic when wet. No completely satisfactory method for solidifying fine clayey soils has been available in the past.

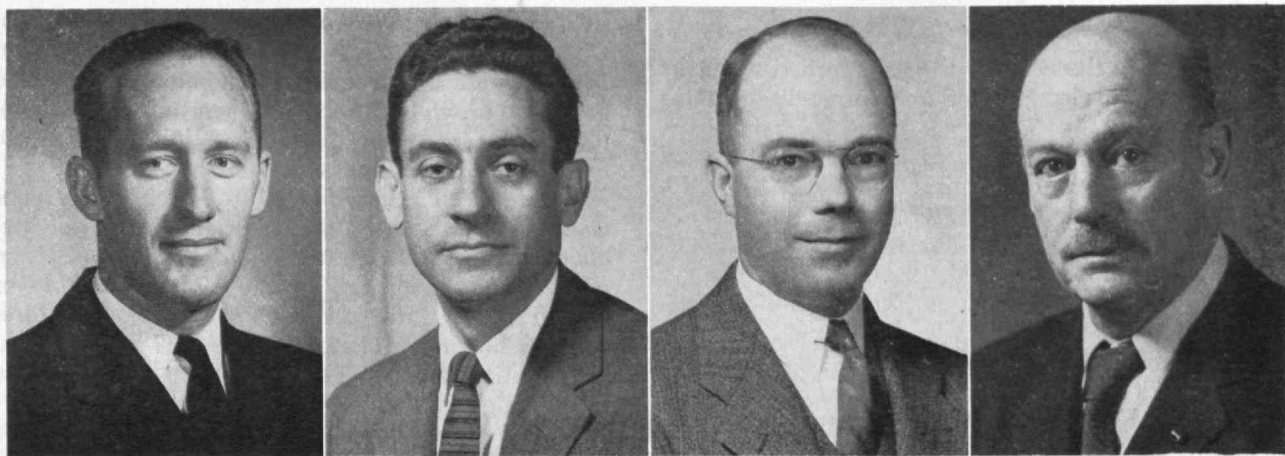
After establishing the ideal characteristics of a soil solidifier of wide utility for fine-grained soil, a preliminary investigation of potentially useful soil stabilizers indicated that phosphoric acid might meet several, if not most, requirements. Accordingly one objective of the M.I.T. research was to explore the suitability of phosphoric acid and a few other related compounds as soil solidifiers, and to attempt to determine under what conditions such materials might be most effectively utilized. Another objective of this study was to find secondary additives which, when used in connection with phosphoric acid in soils, would further enhance soil stability.

Five soils of widely differing composition were mixed with varying quantities of water and with between 2 and 10 per cent by weight of 90 per cent phosphoric acid (or P_2O_5), compacted statically to controlled density, allowed to cure under specified conditions for periods between six hours and 14 days, and immersed in water for specified periods. Unconfined compressive strength, density, and volatile content of the soil samples were measured both after cure and after immersion.

It was found that all soils studied could be successfully solidified with phosphoric acid, higher strengths being obtained with the coarser-grained soils, and larger quantities of acid being required for stabilization of the finer grained soils. Curing under humid conditions was found generally to yield stronger products (both as cured and after immersion) than curing under conditions where evaporation of water occurred. The strength of phosphoric acid treated soils reached significant levels in less than 24 hours of cure, and continued to increase to very high values for at least several weeks. However, soils so treated disintegrated when immersed in water immediately after compaction.

The most important variable affecting the strength of phosphoric acid stabilized soils appears to be the water content of the soil at the time of acid incorporation: Mixtures prepared at water contents only slightly higher than that yielding maximum soil density on compaction were found to have strengths markedly lower than those prepared at optimum water contents for maximum density. Phosphoric acid was found to facilitate mixing and compaction of soils, and hence optimum water contents for maximum strength development were slightly lower than the optimum for maximum compacted density of the untreated soil.

It is believed that phosphoric acid may have considerable promise as an economically realistic stabilizer for a broad spectrum of fine-grained soils, and that some of the shortcomings of phosphoric acid stabilization can be eliminated by the incorporation of trace amounts of amines, acidic organophosphorus compounds, and/or fluosilicates. Further studies along these lines are now in progress.



M.I.T. Photos

Distinguished professional awards in air science, as reported below on this page, were bestowed on four members of the Institute family. Shown above (from left to right) are: Raymond L. Bisplinghoff, Professor of Aeronautical Engineering; Jule G. Charney, Professor of Meteorology; Henry G. Houghton, 27, Head of the Department of Meteorology; and Jerome C. Hunsaker, 12, Professor of Aeronautical Engineering, Emeritus.

Awards in Air Science

■ Three Institute professors received distinguished professional awards at the annual honors night dinner of the Institute of the Aeronautical Sciences in New York on January 28. A fourth M.I.T. scientist was similarly honored at the annual meeting of the American Meteorological Society in New York on January 29.

At the meeting of the Institute of the Aeronautical Sciences, Jerome C. Hunsaker, '12, Professor of Aeronautical Engineering, Emeritus, received the Gold Medal of Britain's Royal Aeronautical Society "for his contributions to aeronautical research and education, including his inspired leadership of the National Advisory Committee for Aeronautics." Dr. Hunsaker served as first president of the I.A.S.

Raymond L. Bisplinghoff, Professor of Aeronautical Engineering, received the Sylvanus A. Reed Award for developing ways to calculate aircraft loads and stresses during maneuvers; and Jule G. Charney, Professor of Meteorology, the Robert M. Losey Award for research in the field of numerical weather prediction.

The American Meteorological Society honored Professor Henry G. Houghton, '27, Head of the Department of Meteorology, "for his important contributions to the growth of the Society." Dr. Houghton is both a past president and past secretary of the American Meteorological Society.

Dr. Hunsaker, who founded at M.I.T. the country's first course in aeronautical engineering, has been a member of the National Advisory Committee for Aeronautics since 1923 and served as its chairman from 1941 to 1956. His early work included supervision of the design of the NC-4, the first aircraft to fly the Atlantic Ocean, and of the airship *Shenandoah*. He became professor emeritus at the Institute in 1952.

Professor Bisplinghoff has been a member of the M.I.T. staff since 1946 and director of the Aeroelastic and Structures Research Laboratory there since 1952. He is an expert in the field of structural dynamics, and received the Sylvanus Reed Award for developing and systematizing techniques for cal-

culating dynamic loads and stresses in aircraft structures.

Dr. Charney is a world leader in the field of numerical weather prediction. His work involves the use of giant computers in studying the physics of the atmosphere and in making weather forecasts. He previously received the Meisinger Award of the American Meteorological Society for his work in this field, and received the Losey Award for outstanding contributions to the science of meteorology as applied to aeronautics.

Dr. Houghton, who has been head of the Department of Meteorology at M.I.T. since 1945, is also director of the Laboratory of Earth Sciences there. He is well known for his research on the natural sources of condensation and of ice-forming nuclei, and their processes. In 1940 he was the first recipient of the Losey Award, which was conferred in January on his colleague Dr. Charney.

Biophysicists Meet at M.I.T.

■ The second national meeting of a new scientific society devoted to using physical and chemical science in the solution of biological problems brought about 500 physicists, chemists, biologists, physiologists, and engineers to the Institute on February 5, 6, and 7. Members of the new Biophysical Society, organized only 11 months ago, heard more than 200 technical papers during the three-day Cambridge meeting, ranging over the entire field of the new science of biophysics.

Harvard and M.I.T. were joint hosts for the meeting. Cyrus Levinthal, Professor of Biophysics at M.I.T., was chairman of the Society's program committee, and Arthur K. Solomon, Associate Professor of Biophysics at the Harvard Medical School, was in charge of local arrangements.

Sessions were held in Kresge auditorium at M.I.T., with a social hour at the Harvard Club of Boston on February 6.

Biochemistry, physiology, electron microscopy, genetics, cardiography, and radiology were among the many branches of science represented at the meeting.

Individuals Noteworthy

■ Featured in the news as the year turned were the 38 promotions, elections, or appointments set forth below:

Theodore F. Spear, '15, as a Director, National Association of Manufacturers . . . *Vannevar Bush*, '16, as Chairman of the Board, Merck and Company . . . *Edward C. Fales*, '22, as President, Gunito Foundries Corporation, Rockford, Ill. . . .

Edgar P. Dunlaevy, '24, as Executive Vice-president and a Director, Phelps Dodge Copper Products Corporation . . . *Ralph B. Norton*, '25, as Chief Engineer, Kerite Company . . . *William P. Lowell, Jr.*, '26, as President, R.L.M. Standards Institute, Inc. . . .

Henry D. Johnston, '27, as Vice-president, Strathmore Paper Company . . . *Richard T. Davidson*, '28, as Investment Vice-president, Boston, Old Colony, and Boston Indemnity Insurance Companies . . . *Gerald A. O'Connor*, '29, as Vice-president, Raymond Concrete Pile Company . . .

Sidney L. Kaye, '30, as President, Parker Hill Medical Center, Boston . . . *Rear-Admiral Truman J. Hedding*, '31, as Bureau of Aeronautics General Representative, Western District (BAGR) . . . *Howard L. Richardson*, '31, as a Senior Vice-president, Sylvania Electric Products, Inc. . . .

Donald B. Sinclair, '31, as a Director, Institute of Radio Engineers, Inc. . . . *Thomas W. Regan*, '32, as President, General Box Company . . . *Charles P. Bowen, Jr.*, '35, as a Director, Booz, Allen, and Hamilton International, Ltd. . . .

Manning C. Morrill, '39, as Vice-president for Operations, Cryovac Division, W. R. Grace and Company . . . *James H. Moore*, '40, as General Manager, National Research Corporation Equipment Corporation . . . *D. Louis Tonti*, '40, as President, American Bridge, Tunnel, and Turnpike Association.

James M. Austin, '41, as a Member of the Council, American Meteorological Society . . . *Kenneth G. McKay*, '41, as Director of Development, Solid State Devices, Bell Telephone Laboratories, Inc. . . . *John F. Wilson*, '41, as Vice-president in Charge of Sales, Metals and Controls Corporation . . .

Otto Zmeskal, '41, as Dean of Engineering, University of Toledo . . . *Richard D. Potter*, '43, as Director of Production and Production Engineering Department, United States Naval Powder Factory, Indian Head, Md. . . . *George L. Fichtenbaum*, '47, as Vice-president, Better Business Bureau of New York City . . .

Herbert C. Wieland, '47, as City Planning Director, St. Paul, Minn. . . . *John S. Anderegg, Jr.*, '49, as President, Dynamics Research Corporation, Woburn, Mass. . . .

Billy E. Goetz, Professor of Industrial Management, as President, Academy of Management . . . *H. Guyford Stever*, Associate Dean, School of Engineering, as Vice-president, Institute of the Aeronautical Sciences, Inc.

■ In addition to those noted on page 247, special honors coming recently to Alumni and members of the Institute Faculty included:

To *Irving W. Wilson*, '11, Distinguished Life Membership, by the American Society for Metals . . .

to *Charles J. McCarthy*, '16, and his associates of Chance Vought Aircraft, Inc., the Collier Trophy for "the greatest achievement in aviation in America, the value of which has been demonstrated by actual use during the preceding year," by the National Aeronautic Association and *Look* magazine . . .

To *Harold F. Smiddy*, '20, the Henry Laurence Gantt Gold Medal, by the American Society of Mechanical Engineers . . . to *Manuel S. Vallarta*, '21, an honorary professorship, by the Universidad Mayor de San Andres, La Paz, Bolivia . . . to *Oscar H. Horovitz*, '22, honorable mention in the 1957 International Competition for his film "The Social Beaver," by the Photographic Society of America . . .

To *James H. Doolittle*, '24, an honorary doctorate of engineering, by the University of Michigan . . . to *Selden B. Spangler*, '32, election to the grade of Fellow, by the Royal Aeronautical Society of Great Britain . . .

To *Robert L. Kyhl*, '47, and *Arthur Karp*, '50, respectively, the W. R. G. Baker Award and the Browder J. Thompson Memorial Prize Award, by the Institute of Radio Engineers, Inc. . . . to *Wilbert E. Chope*, '49, named as one of the "Ten Outstanding Young Men of America for 1957," by the United States Junior Chamber of Commerce.

Solar Energy

■ Ever since 1938 when Godfrey L. Cabot, '81, contributed a substantial sum of money for the express purpose of studying the utilization of solar energy, an interdepartmental steering committee has directed study of practical methods of solar heating. Three experimental buildings have indicated the practicality of using solar radiation for home heating. A fourth solar house is now nearing completion in Lexington, Mass. Its construction marks a new step toward practical use of free energy for house heating.

Solar House IV is a very unusual dwelling, but not radical in its appearance, except for the south wall which is a glass-covered flat-plate radiant-energy collector. The collector has 640 square feet of area, slopes at an angle of 60 degrees to the horizontal and nearly touches the ground.

The energy absorbed by the collector will supply about 80 per cent of the total annual heating requirements. The remaining 20 per cent will be supplied by an auxiliary heating unit.

The lessons learned from earlier experiments have been as thoroughly utilized to design the new "sun home" for optimum performance and automatic, trouble-free operation as is possible at the present stage of technology. A wide range of new ideas on construction techniques, architectural design, collector economics, and means for utilizing energy to the maximum extent have been incorporated in the new building. An attempt has been made to put the solar heating unit on a commercial basis.

A collector plate made of copper tubing and aluminum sheet, mechanically fastened together, has been employed. This combination uses low-cost aluminum for the large collecting surfaces, and confines the use of copper to water tubing where the corrosion resistance properties of the more expensive metal are necessary.

Except for replacement due to accidental breakage, the cover glass assemblies for the collector should require no maintenance. They are provided with filtered breathing slots to help offset expansion and contraction of entrapped air and other effects due to the thermal stresses set up by the large temperature differences between collector plate and outside air.

Domestic hot water is preheated to the temperature of the storage water by circulating incoming city water through coils in the solar-heated tank.

The living quarters are heated by warm air rather than by radiant panels as were used in earlier houses. The collection efficiency is increased by this method, because water from the air heat exchanger can be returned at lower temperature to the collector.

A large storage tank is used in conjunction with a small ($\frac{3}{4}$ ton) refrigeration compressor. By storing a large quantity of cool water during noncritical periods (cool days, nights) the small unit can intermittently provide much more cooling than would be expected from its rated capacity.

An even more significant feature, in the eyes of some, is the plan to sell the house on the open market after it has been completed. Those concerned with the project hope to recover a substantial part of the cost of the building, less the costs directly attributable to the solar-heating system, of course. Since the house is intended to be more or less competitive with others of similar size, quality, and amenities, some insight will be gained as to the actual costs of constructing a solar house. Buyer reaction to a dwelling of new and unusual design and planned for economy of operation can also be evaluated.

Although the house is located off the campus, the project staff will maintain recording instruments in the dwelling. Their records will yield information on performance of the house as a whole, as well as of the individual components of the system. Such information will enable designers to estimate which components, controls, and complexities are worth including in subsequent systems, by comparing the added cost of a component versus the value of the increased efficiency resulting therefrom.

Members of the Space Heating Subcommittee are: Lawrence B. Anderson, '30, Professor of Architecture; Albert G. H. Dietz, '32, Professor of Building Engineering; Joseph Kaye, '34, Professor of Mechanical Engineering; August L. Hesselschwerdt, '31, Associate Professor of Mechanical Engineering; and Hoyt C. Hottel, '24, Professor of Fuel Engineering. Design work on the house was done by: Austin Whillier, '53, research associate in Mechanical Engineering; Richard W. Hamilton, '50, research associate in Architecture; Robert J. Pelletier, '51, research associate in Civil Engineering; Bernard P. Spring, '51, instructor in Architecture; and N. G. Ashar, research assistant in Chemical Engineering.

Subsequent systems to be built by the project will explore and utilize other techniques for heat collection and storage utilization. To be explored in the future will be methods of air collection, differential black collection surface treatment, surface-treated glass, and refrigeration with solar energy.



M.I.T. Photo

Pioneers in instantaneous photography, as well as Course VI classmates, are Gjon Mili, '27 (left), and Harold E. Edgerton, '27, Professor of Electrical Measurements. They are shown together in the Exhibition Room of the Charles Hayden Memorial Library where a group of Mili photographs were on display during January. Mr. Mili is a leading journalistic photographer whose work has frequently appeared in LIFE magazine. Two years ago, he spent several weeks at the Institute making a series of photographic studies that appeared in the May, 1956, issue of LIFE. Dr. Edgerton has been instrumental in developing high-speed flash and stroboscopic light sources; Mr. Mili has been instrumental in using such light sources in professional photography with considerable success.

Ground Broken for Athletic Center

■ Early in February the Institute began construction of a new two-story building which will add more than 40,000 square feet to the existing M.I.T. athletic plant and will link several existing facilities into a huge new athletic complex. The new center is being built under a \$1,000,000 bequest to M.I.T. by 21-year-old David F. du Pont, '56, an M.I.T. student who was killed in an automobile accident in 1955. It is expected that the David Flett du Pont Athletic Center will be completed early next year.

The building will provide lockers and showers for M.I.T. coeds as well as lockers and associated equipment for 1,200 men students. It will also furnish office space for Athletic Association personnel, coaches, and student managers. There will be other rooms for trainers and training equipment, and a Faculty locker room. The largest single recreational area in the new building will be a 50 x 200-foot space on the second floor which will be divided by roll-away partitions into rooms for fencing, wrestling, and general exercise. Six squash courts will be located at one end of the building.

Being erected on the West Campus (the campus to the west of Massachusetts Avenue), the Du Pont Center will adjoin the south side of the Cambridge

Armory, which M.I.T. acquired last fall for athletic use. The east end of the building will be of Eno brick and the open south side will have a curtain wall of glass and porcelain enamel panels. Main access will be from the West Campus Plaza, site of Kresge Auditorium and the M.I.T. Chapel. A glass-entranced lobby will link the new building not only to the Armory but also to the Briggs Field House and the Rockwell Athletic Cage, providing M.I.T. with an integrated athletic center. The skating rink, track, and playing fields are located nearby.

Architects for the Du Pont Center are Anderson, Beckwith and Haible. The general contractor is the George A. Fuller Company.

Midwinter Meeting

■ Always a high light of M.I.T. alumni activities in the Metropolitan Boston area in early February, the Midwinter Meeting of the Alumni Association this year (on February 4) was most fittingly devoted to topics dealing with the teaching of sciences at the high school level. As in years past, a steak dinner was served cafeteria style, in Walker Memorial, from 5:15 to 7:00 P.M., after which Alumni and guests, including many teachers of science in the secondary schools, gathered at the Kresge Auditorium for a group of four lectures.

Apparatus for something like a dozen laboratory projects was displayed in the corridors of Kresge Auditorium. All were intended to illustrate principles of science, and were designed so that high school students could build the apparatus with a minimum of cost for materials, tools, and equipment. Three water-ripple tanks, to demonstrate wave propagation, interference, reflection, and refraction were adequately explained by young men associated with the Physical Science Study Committee, whose work was described by Jerrold R. Zacharias, M.I.T. Professor of Physics, in the July, 1957, issue of *The Review*. Homemade telescopes, range finders, optical benches, stroboscopes, microbalances, and a Michelson interferometer were demonstrated — all made of common and readily available components. Other apparatus on display included soap-film apparatus for measuring the thickness of thin films by light interference, and cleverly designed discs floating over a smooth-surface table top with a minimum of friction to demonstrate the principles of inelastic collision. A mechanical model intended to represent an analogue of the refraction of light rays in passing through media of different refractive index was also among the displays.

Promptly at half past seven, D. Reid Weedon, Jr., '41, Vice-president of the Alumni Association, opened the formal part of the meeting by pointing out the need to improve the effectiveness of teaching science in the secondary schools.

Professor Zacharias, chairman of the Physical Science Study Committee, outlined the progress achieved by this committee during the past year and a half. With grants from the Alfred P. Sloan Foundation, Ford Foundation, Fund for the Advancement of Education, and the National Science Foundation, this committee has assembled a working group of several score of scientists and teachers in colleges, universi-

ties, and the high schools, and has set itself the task of providing a new and stimulating curriculum in physics.

The object of this new program (which is on an experimental basis for the present) is to stimulate interest and enthusiasm for the teaching of physics at the high school level. To this end, new textbooks have been written, much laboratory apparatus (all inexpensive and as simple as possible) is being built, instruction manuals are being prepared, motion picture films are being made to illustrate principles of physics that may be difficult, expensive, or inconvenient to demonstrate, especially in the smaller or less well-equipped secondary schools, and supplementary texts are in preparation. Recognizing that not everything in physics can be taught at the high school level, the committee has selected for emphasis those topics that seem to be most fundamental in illustrating principles of physics, and leaves to supplementary reading, on the part of the more advanced and interested students, further study regarding applications of these principles. The new course is intended to provide adequate instruction for those who do not advance any further in their physics work than the high school level; at the same time, it should provide a firm foundation even for those whose ultimate purpose is to become professional scientists or engineers.

Illustrating an example of the kind of motion picture film that will be made available, Dr. Zacharias showed a sound film in color demonstrating the pressure produced by light. This film showed that the ordinary vane radiometer, as obtainable at optical stores, does not operate by light pressure, although this effect is sometimes erroneously ascribed to the blackened and silvered whirling vanes when the radiometer is placed in a beam of light. The radiometer is not only too insensitive to show the effect of light pressure, but the effects cannot be properly explained, for the vanes rotate in the wrong direction to be attributable to light pressure. It has been shown that the rotation of the vanes is associated with the heating and gas pressure in the radiometer. A simple apparatus of high sensitivity, in which a very thin vane of aluminum is supported from a fine quartz wire in a highly evacuated tube, can be made to show the effects of light pressure, if advantage is taken of the natural period of oscillation of the vane as it is rotated on its fine torsional suspension.

Elbert P. Little, Executive Director of the Physical Science Study Committee, who has taught physics at secondary schools as well as at colleges and has a broad scientific background, explained the work of the Physical Science Study Committee. This committee is now involved in the writing of a new exciting textbook, designed to make high school physics a real adventure; and it is designing laboratory and demonstration apparatus that is spectacular, timely, inexpensive enough for the smallest school, and easy to assemble and store. In addition, almost 100 paperback books are in preparation, covering a broad range of supplemental subjects to provide low-cost, authoritative, and stimulating outside reading on the part of the interested and advanced secondary school student.

(Continued on page 272)

Answers to Sputnik?

Federally sponsored university research centers, operating on a truly interdepartmental level, are proposed to meet current national defense needs

by ARTHUR R. von HIPPEL

THE little satellite circles like an embarrassing fly over the heads of the free world. "Spray it with DDT," says the man in the street. "It violates our air space," says the diplomat. "This requires an agonizing reappraisal," says the administrator. Committees are called to shift the blame; and reassured by the clanging of crash programs, declassified reports and more meetings, the country will settle back to sleep unless we all feel responsible that liberty shall not be lost.

But how can one expect heroic deeds, especially in times of high prosperity, if the true issues are not clarified? And who can speak with real competence? We all see only fractions of the picture. Still, if each one of us inserts his part, we will create a picture of the whole.

The writer's work is concerned with modern materials research. In this area, of vital importance to national defense, a revolution has taken place in thinking and research approaches. The administration patterns of American universities and government services dealing with this field have become as antiquated as Model T Fords. The Russians, not stifled by tradition of the past, are bound to build the institutes our modern times demand.

This crisis is not solved by spending more money and simply expediting. Ours is a really obsolete machine; and billions are misspent and years are lost in tries to keep it running. But let us explain, step by step, the situation now existing and the solutions that might provide an answer.

Modern Materials Research

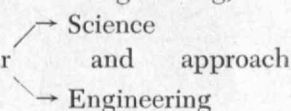
The technical competence of a country is reflected in the way it uses and converts nature's resources. Until recently the approach has been an empirical one: materials were found, their macroscopic properties evaluated, their chemical constituents analyzed, and applications made after proper shaping and processing. Test procedures, based on practical experience, were the exclusive guide of the engineer.

Suddenly, all this is changing. Fundamental science—in decades of quiet studies on electronics, atoms, molecules, and their concerted action in gases, liquids and solids—has reached the stage where a more powerful approach becomes possible: "Molecular Engineering," the building of materials to order.

This means that we need not take the metals and plastics, the rubbers and electronic components that industry mass-produces for buildings and household appliances, cars and radios, to construct with them

our space ships and missiles, nuclear power plants, computers, and the other devices on which our national safety critically depends. We can design materials with prescribed properties for the purpose in hand. We can understand, by observing the molecular phenomena, why materials fail; we can build into the materials the remedies against such failure and get true yardsticks for ultimate performance in the various situations encountered. We can dream up completely new devices, not shackled any more by presently available materials and empirical performance characteristics.

This development spells the end of the specialization of the past, where scientists and engineers of the various professions were walled up from each other in air-tight subdivisions of schools and departments. The time of synthesis of specialized knowledge has arrived, in which we begin to think about materials and their applications in unified vision. The fundamental concepts which help develop high-temperature materials for missiles, better semiconductors for transistors, or new antibiotics for medicine are the same—the designing of molecular structures with prescribed properties. A true "One World" draws into close alliance all sciences and all engineering, and

the promise of this Molecular 
is tremendous.

In quiet times we could sit back and let this new insight seep through the minds of our people in the span of a generation. Unfortunately, today's new technological concepts are weapons. When used only by the opponent, they spell disaster as surely as the phalanx of Alexander the Great doomed the Persians or the advent of firearms broke the power of the knights of the Middle Ages.

Materials and Defense

Our industry is geared to mass production; it earns its money with the goods our daily life demands. Its products today are not basically different from those used before World War II; and our armament at that period required about the same materials as the civilian economy.

That this was actually a misconception became rudely clear in World War II. Suddenly we had to fight in all climates of the globe, and the failure of materials brought our campaign to a standstill in the South Pacific. The gear was eaten by mites and fungi

and rotted in the moist heat of the jungle. Science and technology soon provided resistant materials, but many agonizing months were lost before the supply services responded to the needs of the fighting men. Inertia in continuing the use of materials and devices, even if they prove self-defeating, is an exasperating Newton's law of economics.

It proved easier to provide needed materials for new weapons like radar, for which no established supply sources existed, but here a different lesson had to be learned. The first available dielectric, capable of insulating and guiding radar waves, was polystyrene: styrene was already in mass production for the manufacture of synthetic rubber. No one cares for purity of rubber tires, but extremely small amounts of impurities may disqualify a radar dielectric by causing absorption of the microwaves. The commercially produced polystyrene hence proved completely unsuitable for radar purposes. Only close co-operation between science and industry under the pressure of war succeeded in providing methods in time to measure and improve the matériel and bring it into production in special plants.

This instance illustrates by implication the crucial difficulty of combining in peacetime a strong national defense with the profit motive of free enterprise. Items of the civilian market are the money-makers

Radar and radio astronomy installations, such as this radio-telescope antenna of the Stanford Research Institute at College, Alaska, are prime examples of the modern need for materials of high purity and exacting, made-to-order properties.

Elliott B. Roberts, '21



and were good enough for the defense of the past. Today's defense technology has moved out of the sphere of normal life into the realm of unheard-of speeds, temperatures, and pressures. Our decisive weapons now are not mass-production items on which industry can make a profit. They are ultimate weapons, few in number, which should be built with extreme precision from the right materials and components. Properly designed materials and really reliable components are not available today, industry has neither the experience nor the inherent urge to produce them; and there, for now, we are stranded.

To be more specific: Prevention of war today is unfortunately not yet based on human insight and mutual understanding but on the existence of an unbeatable deterrent. A few hydrogen bombs can devastate a country; a few dozen of such bombs, placed as war heads into missiles which can be delivered with certainty, will hold the world in check. Our ultimate defense strength thus relies on extremely small numbers. Why do our missiles misfire so often? Why do we want our missiles mass-produced? Is it because we buy conventional material and components from industry as a householder buys glass and screws from a hardware store? Is it because we think in terms of artillery bombardments of World War II? To prevent the next war, we have not to buy quantity but quality and extreme reliability, and that we can have only through modern materials research.

Federal Research Centers at Universities

The country needs more scientists and engineers of excellent training; only universities can train them but their financial means are insufficient for the task. The country needs modern materials research for defense; beautiful research is being done in a number of laboratories of industry but only universities can provide the atmosphere of pioneering research where knowledge is sought for knowledge's sake without bias and industrial ties. The universities should create broad interdepartmental laboratories where scientists and engineers work as true allies; they have not yet found the framework to do this. The Armed Services need centers of information in which the latest knowledge for a whole research area is available and facts can be checked unbiased; these have not been created. The Armed Services have pioneering divisions in their research laboratories, which are supposed to work free from immediate tasks for long-range planning; several of such installations, favored by location and understanding administration, have enviable records, but in general, such laboratories do not flourish, because the atmosphere of free inquiry cannot be created; they have been depleted of men by industry and are frequently not more than storage rooms for beautiful equipment. The research scientists and engineers of the Armed Services in locations removed from universities are bound to grow stale, just as medical doctors would, if no refresher periods in universities were provided. All these needs can be met if we have enough imagination for a new venture of co-operation between government and universities.

We need federally sponsored research centers at the universities which combine the highest standards

(Continued on page 268)

The Dignity of the Individual IN THE TWENTIETH CENTURY

The most meaningful province of private enterprise is universal moral discipline. We must now demonstrate that members of a free society can — and will — give their devotion to the common good.

by JOHN B. WILBUR

I HAVE been among those who have shared a concern for the effect of technological progress on the dignity of the individual. Among the advances of technology, I include everything from guided missiles to blenders, sports cars, and picture windows. By dignity, I mean not only the intrinsic worth of man, but a certain amount of self-determination into the bargain. By the individual, I refer to you, or to myself, or to any person who, in this Twentieth Century, may seem to have a lesser control over his own destiny than we like to regard as man's birthright.

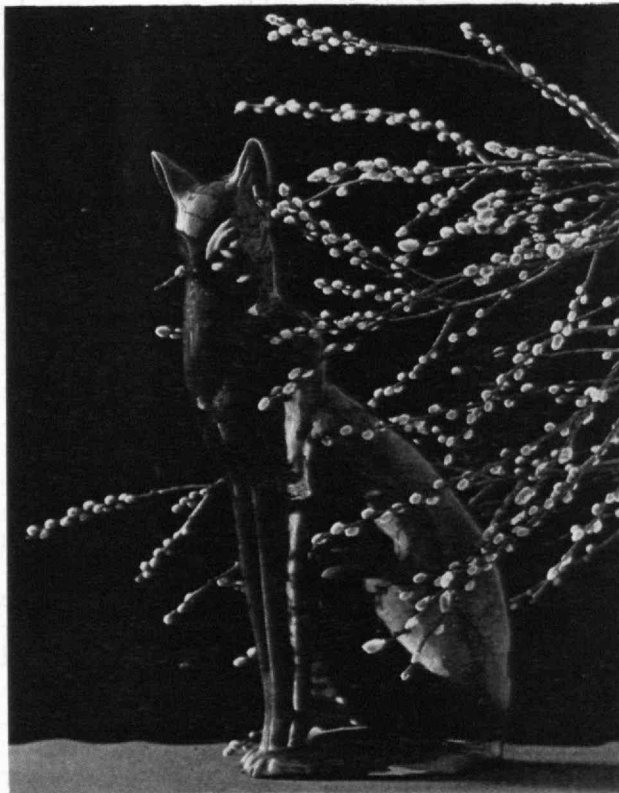
That the march of technology is currently something of a mixed blessing has been pretty well assimilated into the American consciousness. It is not, of course, that we aren't pleased with all that our shiny new hardware has done to better our living, or even that we aren't eager for bigger and chromier gadgets. But today it is difficult to avoid the realization that what began as the control of nature to make our lives a little happier and a little more secure, has so mushroomed that it has released forces and tendencies that could harm or even destroy the very civilization that has been reared to expect improvement.

While we may manage to forget it much of the time, the spectre of catastrophe lurks over us — and it frightens us, not only because it would be such an horrendous thing, but because we feel so individually impotent either to prevent it or to protect ourselves if it should come to pass. And we need not go to extremes to sense technology's impact on our self-assurance: there is the electronic brain, which some fear as a challenge to mental integrity; and there is automation, which to others is a threat to the dignity of labor. Closer to most of us, there is the extent to which we have become dependent on oil, for example — or on electricity; and there is our constant dependency on a host of other people that has come from technology's offspring — the division of labor. It is sobering to dwell on possible implications of this enveloping interdependency of people and technology; and it is not surprising if we sometimes feel that we have been more successful in terms of technological advance itself, than in the meaningful integration of technology into our culture.

To be fair, technology has — in many ways — enhanced the status of the individual. It may well be that nuclear energy will, in the end, prove itself a benefit to civilization. So-called electronic brains are

not gargantuan monsters — they are but glorified adding machines; by taking over the drudgery of massive computation, they can free and support man's mental energies for his more creative efforts. Automation will not replace man save on repetitive assignments; being more sophisticated than mere mechanization, it can lessen not only the muscular burdens of greater productivity, but the more tedious aspects of its mental demands as well. And if the increasing dependency of man on technology has lessened his stature as a separate being, it has surely brought him much that can enrich his life, and leisure for the enrichment. These points can be argued, and there is truth in them; yet despite their truth we live in an anxious age when more could happen to us in less time — and through forces seemingly beyond our control — than has ever before been possible. Man-made perils have become ascendant over the perils of nature, and man seems an unreliable custodian of the power to destroy. In a very real sense, the sky might open up

Photograph by H. Armstrong Roberts





Photograph by Harold M. Lambert
An old teaching can assume fresh importance in a time when man's technical genius has developed too rapidly to maintain a close liaison with his moral behavior.

above us in a twinkling; and this may seem a treacherous shelter indeed for the nurturing of dignity.

Reassuringly, the shelter is not so vulnerable if we look to man's intrinsic worth — for his inner values need not cower behind bulwarks of mortar and of steel. Forces beyond his control may blast the structure of his physical welfare; but if man so determines, there are no forces that can arrest the seeking of his moral and spiritual potential. Blenders, sports cars, and picture windows are all very well in their place — but they are not the bread of life. Living to a ripe old age, secured by a pension, may prove a blessing if it comes — but it is scarcely the purpose of living. Most of us would agree that the inner worth of man is more likely to be measured by the rewards he deserves than by those he receives, and more often reflected by the devotion of his service than by the years of his existence. There seems good reason to believe that in the Twentieth Century — or in any century — intrinsic worth can be inviolate.

I can accept the idea that technological advance involves no built-in barrier to the intrinsic worth of the individual; but I cannot drop it there, for I find it difficult to divorce dignity from a certain degree of self-determination. We cannot camouflage the fact that technological progress has brought us to a time when — regardless of who is ahead in the race for

destructive power — men in distant places could, in an hour of terror, issue orders that might lead to the obliteration of much of the world as we know it. In this dilemma it is not easy to see what the individual can do to minimize the hazards that face him. When we sense a lessening in the influence of our actions on our futures — when we feel that there is a threat to the role of self-determination in our strivings — then our dignity as individuals seems to find itself in jeopardy.

Most of us would agree, however, that universal moral discipline could insure the co-existence of men with the two-faced prodigies they are creating. A few may hold that widespread discipline is best achieved in a pattern planned around the state's requirements, and put into action by a centralized authority. This may appear the best way to security; but how often would state-ordered discipline, based on the dictates of one man or of a group of men, be guided by motives that were moral in their nature? And if the surrender of free choice were the price-tag of security, would not dignity itself be forfeited into the bargain?

Universal moral discipline can, it would seem, rest only on the voluntary self-discipline of the individual. It can germinate in no other manner; it can be encouraged by precept and example, but it cannot be forced upon us; it is the private obligation of the individual — indeed, it is the most meaningful province of private enterprise. It may be that in dedication to high purpose, even of a fairly small group of people, there is a whole that transcends the arithmetic sum — paving the way, perhaps, to a more general moral emergence — and leading, at last, to a more mature status for all of mankind. Whether this be an old or a new hope seems quite beside the point; an old teaching can assume fresh importance in a time when man's technical genius has developed too rapidly to maintain a close liaison with his moral behavior.

If there is a deterrent to active acceptance of this doctrine, it springs, perhaps, from the thought that — fine words to the contrary — however well we order our own behavior, there is small likelihood, much less a guarantee, that others will be so moved. Yet, is not venture for high purpose, lacking the while the certainty of success, the very essence of true dignity? If there is a promise in spending one's self freely in pursuit of an ideal, it lies in neither victory nor defeat, but in the tasting of the flavor of living along the way.

Technology, in crossing the boundary of insured control, has swept us into an era of new dimensions. We must now demonstrate that the members of a free society can and will — voluntarily and without guarantee of security — give devotion to the common good through the mature conduct of their day-by-day living — a devotion more selfless and more consistent than can be exacted by the rule of any dictator, or under the compulsion of statism in any of its various forms. In this Twentieth Century — when we may determine whether the products of technology are to be gainfully used or frightfully abused — there is not only room but, indeed, the greatest possible need, for the dignity of the individual. Technology is part of civilization, and we must learn to live with it.

From Test Tube to Table

Many products common to the American dining table
10 years from now will have achieved acceptability
because of research now going on in food technology

by S. A. GOLDBLITH and B. E. PROCTOR

THE era of the chemist or technologist in his small dingy laboratory or off to one side under the stairs has completely passed. Today, food scientists and technologists are taking their places in important management positions in the many areas of the food industry, which is our nation's greatest single endeavor.

This has come about because of greater awareness on the part of management of the increasingly important role the research of today plays in the company profits of tomorrow. Many doctoral students in the Institute's Department of Food Technology take a minor in industrial management. Thus, we have emerging today a new type of food technologist, one who is aware of more than the test tube — one who is cognizant of the fact that products must be sold not just the first time — one who knows the meaning of the term "repeat sales."

The modern food technologist is a man well trained in the disciplines of mathematics, physics, chemistry, biology, and the relationship of these basic disciplines to foods, and able to express these through an engineering operation.

Recently, the research director of one of our large supermarket chains was questioned about his concept of what the future planning of the supermarket chains should be — for the year 1980 or 1990 — based on today's technological progress. At the time we were surprised at his reply to the effect that his organization was interested now, and planning now for the year 1960 or 1965 and that this was quite a difficult task in itself. They really were unable to go as far ahead as 1980 or 1990 in their planning because things are moving so rapidly.

If one analyzes this particular business, the type of equipment, and the facilities needed for the initial capital investment for supermarket business, one can understand the enormity of the problem for immediate planning for five years or 10 years from now.

On the other hand, one should realize that the progress of technological research is usually relatively slow. The time required from the concept of an idea or of a new food product or of a new means of processing which will bring a new food product to commercialization may be relatively long. Most developments in food processing have not occurred overnight. For example, Nicholas Appert invented "canning" 150 years ago; mechanical refrigeration equipment was developed about 1850, but the commercial utilization of freezing for food preservation

did not really begin until about 1930. Thus, perhaps more long-range planning may be needed after all.

There are many problems which must be solved between the concept of a new idea, or new food product, and its successful launching on the market. What are the major technical problems to be solved before a new product can be put on the market and become a profit maker? In general, it has been pointed out^{1*} that any new food product must possess the following characteristics in order to be advantageous from the point of view of the company developing it: (1) Convenience; (2) Acceptability; (3) Nutrition; (4) Economy and efficiency; and (5) Safety.

Any new food product possessing these five basic factors must also have other characteristics to be successful. It must (a) be superior to any competitive products which are now available on the market; (b) offer something additional to the products available today; or (c) be a completely new product possessing great sales appeal, preferably by convenience.

The five characteristics of a new product listed above actually are abbreviated, since they include a whole host of factors which are encountered and must be solved in new product development. What are some of these included factors?

(1) *Convenience*. As the term is used here, convenience alludes to today's trend in the housewife's desire for more time to do other things: Convenience foods represent the impact of Mrs. America on the food industry.² Convenience means processing. (In 1956 some 71 billion dollars were spent for foods in this country, of which 50 billion dollars went for convenience items — processed foods!) Strictly speaking it means moving kitchen operations into the food factory!

Thus, in the development of a particular new product today, some processing technique will have to be considered and worked on. In the case of dehydration, for example, will the product be dehydrated by means of a spray drying, drum drying, or lyophilization (freeze drying).

Convenience also calls for proper packaging of the product. If the package is not easily opened, the product will not meet with favor. And let us not forget the primary mission of the package — protection of the food. Many housewives today have never seen the cracker barrel of the general store era.

^{1*}Please see numbered references at end of article, page 266.

(2) *Acceptability*. Will the product be more acceptable, more palatable, and more desirable to the consumer than competitive products or products in a similar class? Acceptance of a product requires expert organoleptic panel evaluation and screening of the product during the developmental stage, statistical evaluation of these many data, and finally consumer acceptance testing for the ultimate test.

Acceptability also means packaging from a different point of view — the attractiveness of the package — “sales appeal.” Eye appeal sells more than 50 per cent of the products in today’s supermarket.

(3) *Nutrition*. Many people are unqualified to judge nutritional quality either in a single product or in a diet — but every consumer is in favor of good nutrition. It has a plus value, although few housewives will read the labels on a package to see if a product is optimum. Very rarely will an average consumer pay a premium for good nutrition but will reject questionable products on a faddist’s advice.

(4) *Economy*. A new food product must be manufactured as cheaply as possible in order to compete. It must be as economical as possible and still produce the desired convenience factors. One can readily guess that there is a maximum amount that a housewife will pay for a certain degree of convenience. By going beyond that particular degree of convenience we encounter the old story of the law of diminishing returns. Low cost of a product to the consumer must often be aided by increasing the efficiency of factory production methods with the use of new and higher speed equipment, either in processing or packaging. Both of these fields are making tremendous strides in today’s food manufacturing plants.

(5) *Safety*. A food must be safe to eat as well as nutritious. Thus, processing times which insure safety of the product, as well as optimal process times in terms of the best flavored product, must be obtained. The safety and wholesomeness of the product must be assured. Assurance in safety is considered present because of the care and diligence exercised by the U. S. Food and Drug Administration in its activities to protect all food consumers.

One can readily see that the development of a new food product, in terms of the five basic factors listed above, takes time, people, and equipment, all of which integrate into expense.

What are the factors that have an influence on the new food products appearing on the market today? Many of us are familiar with the article in *Fortune* in 1953³ and the more recent article in *Food Processing*.⁴ Both articles illustrate very succinctly the market of convenience, the increase in life expectancy, the increase in population, the increase in earnings, and thus the reflected increase in living standards and how all of these have had an effect on the thousands of neat little packages surrounding us on a visit to any modern supermarket.

There is another way of looking at this subject, however, and that is from the analogy of two small rivers having their origin in two separate mountain belts and both flowing into a common larger river which empties into the ocean. One of the rivers represents production knowledge of today which has been obtained by the fundamental research of yes-

terday. The other river represents consumer demands, arising basically from more income from more people. Together they are integrated in the modern food industry of today resulting in what we now can see on a visit to any modern supermarket.

Packaging and Its Influence on Today’s Foods

Packaging plays one of the most important roles in the modern supermarket.⁵ A glance into the recent past may make this even more vivid.

A century ago — even a half century ago — when a housewife went shopping, the grocer dug out raisins from a battered fly-bitten box, kicked a tomcat out of an open barrel of cereal or of sugar, sliced a ham with a general purpose utility knife that cut everything, and laid the slices of meat on some old pieces of secondhand paper.

Contrast this with today’s packaging. Plastic films, metal foils, laminates, flexible and rigid materials provide packages with bright attractive lithography. We have glass containers and metal ones, and food packaged in tubes. Packaging has opened up a whole new era in foods.

Today’s Newest Products

Among the products which have been associated with the market of convenience and which have had a tremendous influence on the shelves of grocery stores within the past five years have been the following items: prepared cake mixes, precooked frozen fish sticks, instant milk, frozen dinners, prepackaged fresh meats, frozen meats, soluble nonfat milk, and dehydrates.

Baking mixes have had a tremendous impact on the American housewife, as well as on the industries which are contiguous to the cereal industry — the shortening industry, the spice industry, the flavoring industry, and the dairy industry.

While the idea of mixes dates back to 1889 with the familiar “Aunt Jemima” pancake mix, it is only within recent years (with the development of new ingredients and processes, such as antioxidants, tailor-made shortenings, de-sugared egg solids, active dry yeasts, and locked-in flavors) that it has been possible to obtain many varieties of baking mixes which have good shelf life and which compare favorably both in finished product and in cost with the old-fashioned homemade product. In 1955 it was estimated that \$137,000,000 was spent by Mrs. America on 350,000,000 packages of baking mixes!

Precooked frozen foods are another important item in the convenience market. The reason for this, of course, is the desire for Mrs. America to have more time for communal affairs and for more leisure time.

In general, the frozen food market represents an accomplishment on the part of food technologists to obtain foods with the same savory characteristics throughout the year that are normally associated with fresh foods in season.

The development of home freezers from the unknown to the commonplace since World War II, as well as the development of excellent display cases for stores, has helped increase the sale of frozen foods. Frozen foods accounted for some 3.8 of the 17 billion dollars’ worth of chain food store business



J. H. Thomas

in 1954, and it is estimated that, in 1960, frozen foods may account for 10 per cent of the chain supermarket sales.⁶ This is an enviable record for an industry which has just celebrated its 25th birthday.

Of all the frozen foods in 1955, prepared or precooked foods took first prize in terms of increase in sales. Pot pies outrank all others in dollar sales except orange juice, and the list is ever expanding, as potato products, fish sticks, complete dinners, waffles, fruit pies, cheesecake, cream pies, Chinese foods, pizza pies, and blintzes are added.

Precooked frozen foods represent one of the outstanding examples of laboratory achievement being translated into commercial production. The problems to be solved were manifold and covered almost every aspect of food technology from the basic raw materials to the package, and from processing techniques to distribution.

Instant milk represents one outstanding development, both from the point of view of new process techniques as well as from the standpoint of dairy products themselves.

In so far as milk is concerned, one of the revolutions of the Twentieth Century has been the development of "instant" nonfat skim milk solids. This development has catapulted the use of dry skim milk solids from the unknown to the commonplace in the home, as well as in bakeries and other food industries. Not only have a number of companies begun

producing this milk, but also types of equipment for its manufacture have been developed.

Prepackaged frozen meats have been another item which has had a recent boom, again due to the desire of the housewife for convenience foods. Prepackaged frozen meats have been popular from the point of view of the housewife for she knows exactly what she is getting and that there will be little or no waste. Furthermore, with the development in packaging that has taken place over the past few years, it has been possible to have all cuts and types of meats of the highest quality readily available.

Dehydrates represent the ultimate in convenience items. They range all the way from powdered beverages, cake mixes, dessert mixes, soup mixes, salad dressings, gravies, and sauces, to milk drinks for infants. While dehydration dates back to antiquity, it is only since the tremendous requirements for feeding our troops overseas in World War II that the dehydrates have come into their own.

Advances in technology have made possible the multitudinous varieties of dehydrated foods of superb quality that we have today. Dehydrates may be considered a war baby for, if one were to study the history of warfare, one would find that in the Civil War and in the Boer War troop rations contained dehydrated foods.

World War I saw the industry expanding to a marked degree. However, the fundamental knowl-

edge and technology of dehydrates were so poor that the industry suffered a decline following World War I. World War II, however, saw an immense amount of research carried on by the Department of the Army, as well as industry, with the result that following World War II there has been a tremendous upswing in consumer acceptability, as well as resultant sales. The soluble coffee industry itself now accounts for over \$200,000,000 in annual sales, and this industry did not really become popular until after World War II and technological developments of that time.

One has but to look around in any supermarket and become amazed at the number of dehydrates that have assumed a large amount of shelf space because of consumer demand.

If one were to look at the various rations available for the Armed Services today,⁷ one cannot help being impressed with the tremendous amount of research and development that have gone into the preparation. With our Armed Forces numbering in the vicinity of 2,000,000-3,000,000 men, widely scattered over the four corners of the earth and in locales varying from many leagues under the sea to 10 miles in the air, one cannot help being impressed with the tremendous accomplishments of science and technology in overcoming the feeding problems. Every one of today's newest products is a part of the food for the Armed Forces plus a few others, such as Air Force in-flight-meals, liquid meals and semisolid meals, and many others.

The story is now old about the nuclear submarine and the need for surfacing only for re-enlistment purposes of its crew; but this does give us an idea of the problems with which the military and the food industry are faced regarding special feeding problems for the submarines in the nuclear age.

Foods have been developed, and more foods must be developed, which will require a minimum of space, a minimum of refrigeration, and offer a maximum of nourishment and a maximum of consumer acceptability.

New Foods and New Food Processes

When speaking of this subject, one really becomes a prophet, but prophesying for the food industry is really not so difficult as for some other industries, because it is a fairly safe wager that in the year 1975 or in the year 2000 our descendants will like steak as much as we do today. Moreover, it is a pretty safe prediction that in the year 1975 or in the year 2000, 99 out of 100 persons will want to eat three square meals a day.

Today, we see the development of a number of food items, a number of food processes, which are on the horizon for tomorrow. It is difficult to separate food items and food processes because new food processes will result, undoubtedly, in new food items. Let us look at processes for the moment.

Today, we are in the atomic age, and food technologists are now just as aware of this as are nuclear physicists. Some 14 years ago, the M.I.T. Department of Food Technology pioneered in the use of ionizing radiation energy for the sterilization of foods, drugs, and pharmaceuticals. Today, the atomic age is pro-

ducing disease-resistant grains, and tomorrow, when the problems are solved, pasteurized and sterilized food products should be available on the open market.

Today, radiation-preserved drugs are available for purchase. There is no reason to doubt that a number of the problems now being worked on in the field of radiation preservation of food will be solved some 10 years hence.

The biggest single problem facing radiation preservation of foods is associated with the changes which take place in the foods due to radiation and which are undesirable from the point of view of consumer acceptability. Some of these problems have already been overcome. Others are being worked on in many laboratories throughout the country. Five years ago almost every food technologist in the country would have said there is no hope of overcoming the problems involved in making milk a successful radiation-sterilized food. Milk is one of the most sensitive of foods when treated by ionizing energy. Radiation research in the laboratories of the Department of Food Technology at M.I.T. has resulted in a new method of using ionizing energy for the sterilization of milk, which has already enabled us to bring the off-flavor threshold recognition dose of radiation for milk and milk products within range of the sterilization dose, and certainly far beyond the range of dose required for pasteurization.

Because of the tremendous impacts and large sums of money now being spent in research in this promising field of food technology, I think it is safe to say that within the next decade a radically new method of food processing will be available and will be in limited use throughout the country.

Radiation preservation will not supplant refrigeration. This is one of the misconceptions that many people have about cold sterilization. You may recall that 30 years ago, it was prophesied that freezing of foods would replace canning. Yet in 1955 more metal containers and glass jars for heat-processed foods were manufactured than in any year since canning started. In this same period, freezing of foods has increased rapidly. This increase has apparently been without any effect on many canned products. The per capita of consumption has increased from 30 pounds per capita to 96.7 pounds per capita in the past 25 years. Thus, new food processes merely mean more processed foods of many kinds rather than less food processed in one particular way.⁸

The analogy between the freezing and the canning industry of the past 25 years is just as applicable today when one compares radiation preservation and refrigeration. Radiation preservation will only supplement and complement refrigeration rather than supplant it. Based on the technological knowledge of today, and the research work already done in our Department on radiation, we can foresee the time when preserved chopped meats (hamburgers) can be kept well over a year by mild radiation treatment, whereas without such radiation, they normally keep only six or seven days at most at temperatures of 40 to 45 degrees F. Other food products which may

(Continued on page 260)

BUSINESS IN MOTION

To our Colleagues in American Business . . .

"Printed circuits!" "Printed circuits!" You hear it on all sides today. And well you might. For printed circuits have so many advantages. They have compactness as compared to conventional wiring and compactness that makes possible better assembly arrangements and techniques. Numerous, time-consuming hand operations are eliminated, there are fewer rejects, shorter, less intricate assembly lines, and fewer soldering operations, as with printed circuits a single dip-soldering operation can solder all joints at once.

Revere, naturally, has been interested in printed circuits from their very inception. So Revere Research Engineers immediately went to work to perfect a copper that would meet all of the rigid requirements encountered in manufacturing printed circuits as well as those necessary to their efficient operation. Accordingly, they set up these rigid specification standards: there can be no peaks or valleys. Surface must be hard and of uniform density through and through and side to side to maintain positive conductivity throughout the circuit. Also, a hard surface permits resist to clean off easily as there are no pores to hold resist and cause trouble later when soldering. Even the most closely spaced and finest lines encountered in a printed circuit must have a sharp definition of the edges and be freer from pits, pinholes and imperfections.

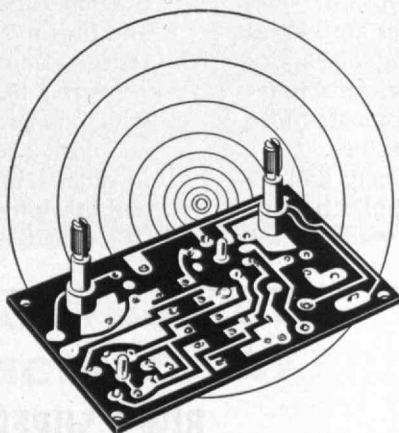
Also, the copper must be free from oxidation as it comes from the mill and without lead inclusions,

present a sufficiently clean surface so that fluxes will wet readily and when automatically soldered the solder coat will be uniform every time . . . free of skips or bald spots. Copper-to-laminate bond strength must be uniform and adequate. Revere Rolled Copper also shall exceed standard specifications as well as meet ASTM B5 specification for purity with a 99.9% minimum rating.

Those were the rigid standards set up by Revere Research Engineers and those are the standards met by the Revere Rolled Copper now available in unlimited quantities. Said one laminator, after using Revere Rolled Copper, "It enables us to give our customers superior copper-clad laminates that present a smoother surface (freer from pits, pinholes, and imperfections) . . . more uniform thickness without sacrifice of conductivity. The result has been, consistently satisfactory etching at better production rates."

And, because you can get all the advantages of Revere Rolled Copper at no extra cost it will pay you to make absolutely certain that you specify Revere Rolled Copper for your printed circuits when you order your boards from your laminator.

But, whether you order Rolled Copper from Revere or other materials furnished you by other manufacturers . . . the best results and the greatest satisfaction are obtained only when you take your suppliers into your confidence.



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TEST TUBE TO TABLE

(Continued from page 258)

have their refrigeration shelf life extended are lunch-eon meats, frankfurts, and other cuts of fresh meats, such as steak.

Another new method of food processing includes the application of antibiotics to increase the shelf life of foods. Today in the United States chickens are being processed in ice containing antibiotics in order to extend the shelf life of the chicken. Research has indicated the tremendous possibility for other antibiotic-processed foods. The rationale of this method is that the antibiotics will inhibit the micro-organisms which grow, multiply, and cause spoilage. Thus, increased shelf life is obtained. The Food and Drug Administration allows this process with chicken because chicken is never eaten in the raw form but is cooked thoroughly, and it has been found that the amount of cooking required will destroy any antibiotic. The Food and Drug Administration has thus far not allowed the antibiotic to be used with any other food in this country although Canada has allowed certain antibiotics to be used with fish.

Research is under way now with other antibiotics in various types of fish and with injecting antibiotics into meat animals just prior to slaughter. Antibiotic-treated foods may be one of the developments to be looked for in the grocery market of the future.

A third method of processing which may find its way into food products will be the application of microwave energy for processing as well as for

cooking. You all know that ranges are now being manufactured which have radar magnetrons as energy sources to permit uniform and rapid heating throughout products so that roasts may be prepared in 25 minutes and cakes baked in one minute. These electronic ovens are available today. The basic principle, that is, high-frequency heating, may find its way into food processing of tomorrow for the production of certain dehydrated foods.

One of the developments of today still in the research stage is frozen baked goods. The most modern bakeries of today preparing for a large supermarket business find it necessary to change formulae and ingredients a number of times each day. Thus, the production capacity is greatly reduced due to the necessity of changes to meet the large variety of products which must be baked. Sometimes production is changed as much as 40 times in one day in one large bakery. If one were able to spend a certain period of the week producing only one item, such as bread, and then freeze the bread properly so that it could be shipped in the frozen state and kept in warehouses until required, one could raise the production capacity of a particular bakery severalfold and thus more than pay for the increased cost due to refrigeration.

Frozen baked goods are being developed today which do not differ in quality from fresh baked goods and with a resultant saving to the producer, not only in dollars but in production facilities. Tomorrow — and this tomorrow is almost here today — I think one

(Continued on page 262)



BIW "SUPER-JET" 1000°F INSULATED WIRES

BIW "Super-Jet" Insulation is the brand name given to a form of insulation applied to a series of insulated wires and cables designed for temperatures of 1000°F.

This insulation is fibrous in form. At the same time it is protected to some degree from absorption of moisture from the air under humid conditions. The process of decomposition or heat aging at this temperature does not leave a carbon deposit which would deteriorate the insulation.

Two classes of use and ratings have been adopted. For Instrument Wiring voltages usually not over 120 volts A.C., and given a rating of 300 volts, a minimum thickness of insulation is used to provide a small diameter and lightweight cable for instrument circuits. For Power Cable adequate insulation is applied to provide a rating of 600 Volts A.C.

Both classes of cable are made in the shielded and unshielded types. The shielding consists of stainless steel braid which is recommended in all cases where abrasion is an important factor in the life of the cable.

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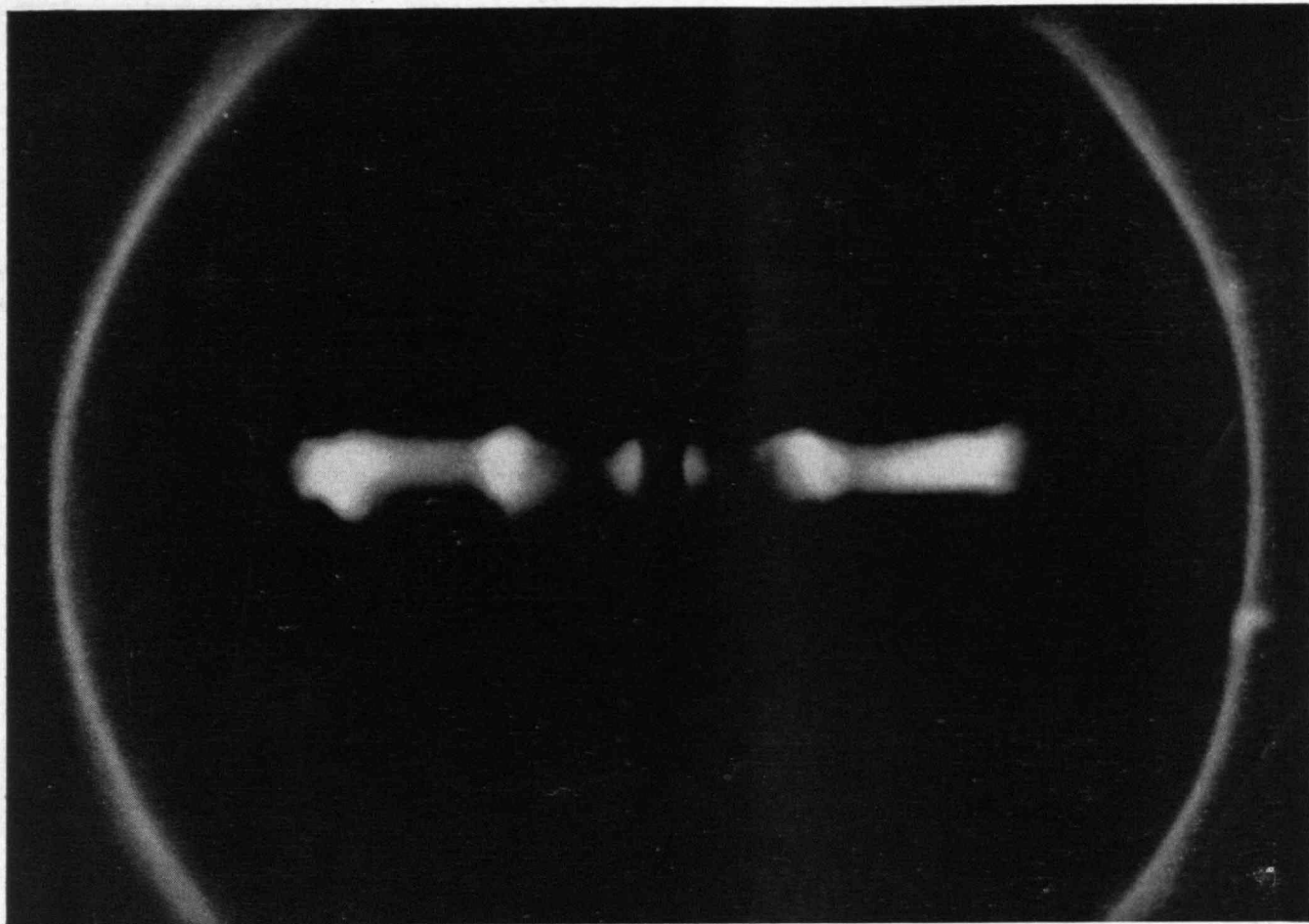
Size	O.D.	Price per Foot			
		100'	250'	500'	1000'
#24 Gauge	.100"	\$.55	\$.45	\$.40	\$.35
#24 Gauge Shielded	.125"	.60	.50	.45	.40
#20 Gauge	.110"	.60	.50	.45	.40
#20 Gauge Shielded	.135"	.65	.55	.50	.45
#16 Gauge	.135"	.70	.60	.55	.50
#16 Gauge Shielded	.160"	.80	.70	.65	.60

SUPER-JET POWER CABLE

#20 Gauge	.150"	.80	.70	.65	.60
#20 Gauge Shielded	.175"	.90	.80	.75	.70
#16 Gauge	.160"	1.00	.90	.85	.80
#16 Gauge Shielded	.185"	1.10	1.00	.95	.90
#12 Gauge	.200"	1.20	1.10	1.05	1.00
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The critical problem in attaining velocities of hundreds of thousands of miles per hour is the containment of temperatures comparable to those in the interior of stars. Because the temperature of the driving reaction will have to rise as the square of the exhaust velocity, temperatures greater than one million degrees will be encountered in reaction chambers. Magnetohydrodynamics offers a unique solution to the basic problem of containing the reaction without contact with the chamber walls.

Briefly, the physical principles of magnetohydrodynamics are these. Since gas at such temperatures is completely ionized and is an effective conductor of electricity, the introduction of currents in the gas (in this state called a plasma) creates an electromagnetic field. This field makes it possible to control the plasma by applying an external opposing magnetic field which creates a magnetic bottle to contain the charged gas particles. Similarly,

a magnetic-field piston can be used to accelerate the particles. Such magnetohydrodynamic reactions are expected to develop exhaust velocities that are an order of magnitude greater than those generated by present chemical rockets.

At Space Technology Laboratories, both analytical and laboratory work are proceeding in the field of magnetohydrodynamics. This work illustrates the advanced research in STL's Physical Research Laboratory, which emphasizes the application of basic physical principles to the requirements of space technology.

In support of its over-all systems engineering responsibility for the Air Force Ballistic Missile programs, and in anticipation of future system requirements, STL is engaged in a wide variety of research and experimental development activity. Projects are in progress in electronics, aerodynamics, propulsion, and structures.

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SPACE TECHNOLOGY LABORATORIES

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TEST TUBE TO TABLE

(Continued from page 260)

will see a large number of baked goods on the market distributed in the frozen state. Thus, a given bakery might bake bread on Monday and Tuesday and then bake pies on Wednesday. These items will be frozen and distributed as needed for the rest of the week or even for several weeks. Then Thursday and Friday will be used for the production of various other miscellaneous products, such as buns and cakes, with a resultant increase in the plant's output.

Another product to come on the market tomorrow will be dehydrated meats. Thus the housewife of tomorrow will be able to go to the grocery store and buy five one-pound steaks weighing only one pound and keep them on the pantry shelf instead of in the refrigerator. When she is ready to use them, all she has to do is soak them in a predetermined amount of water for a predetermined amount of time and put them in the oven to broil.

Another development which is in the test-tube stage today, but which certainly should be available tomorrow, are the aerosol foods. Semisolids such as spreads, salad dressings, condiments and sauces, ketchup, peanut butter and mayonnaise, for example, coming out of a can in an aerosol, just like shaving cream, will be easier to dispense and easier to store and undoubtedly will find great favor in the convenience market of tomorrow.

We already have some aerosols today, such as whipped cream which, in 1955, was sold to the extent

of some 60,000,000 cans. In addition to the products which I have mentioned, there are certainly other individual products which will be on the market, such as dehydrated potatoes, potato cubes, and potato granules.

Innovations in packaging of many foods will take place which will avoid dishwashing. Even today we have some foods which are sold in disposable aluminum platters including frozen steaks, T.V. dinners, and muffin mixes which have built-in plastic "mixing bowls."

In addition to all these, however, I think that the biggest revolution to take place in the food industry will be something that we cannot yet define very well, because it is really in the test-tube stage. That relates to fundamental research on the chemistry and flavor of foods. Recently, a new rationale has been developed on certain enzymes which contribute to the flavor of foods and which are lost in the heat processing of foods.

But more important than this is the objective determination using latest techniques in physics and chemistry to characterize those compounds responsible for flavor of foods. What gives coffee the aroma that we like when we wake up in the morning? Why do we prefer charcoal broiled steak to steak broiled in an ordinary oven? What is there about fresh vine-ripened tomatoes that we prefer when they are available in July, August, and September, to the tomatoes shipped from down South during the middle of winter? Why is the flavor of banana differ-

(Continued on page 264)



BATH IRON WORKS

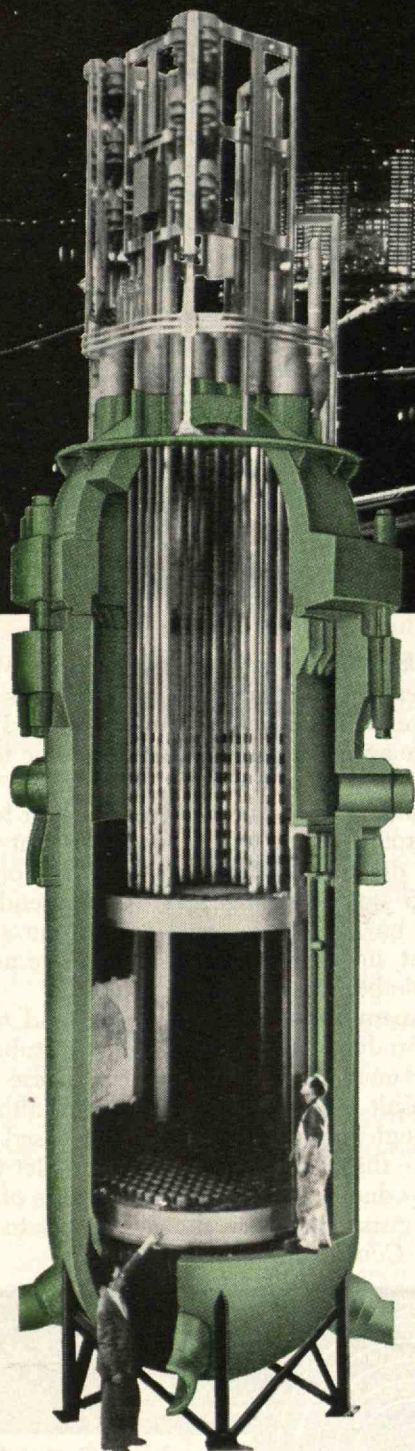
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Full-scale cutaway model of 4-story high Shippingport reactor. The reactor vessel, indicated by the colored areas, was designed and built by Combustion. Model made for Westinghouse by Gardner Displays.

Today, commercial electric power from the atom is a reality in America. On December 2, 1957, the country's first full-scale atomic power plant... the Shippingport Station operated by the Duquesne Light Company... went critical. It began producing power December 18 and reached full power output 5 days later. Designed by Westinghouse Electric Corporation for the Atomic Energy Commission, this pioneer nuclear power plant is now in regular operation, supplying electricity to the Pittsburgh area.

Combustion Engineering was one of Shippingport's major suppliers. Its contribution: the heaviest unit of atomic power equipment ever built... the 235-ton reactor vessel—depicted by the colored areas in the picture opposite. This mammoth container houses the nuclear fuel charge within 8½-inch steel walls. More than 3½ tons of water pass through the vessel every second—at pressures of about 2,000 pounds per-square inch—to carry off the tremendous heat generated by the nuclear reaction. Though it stands over three stories high, many of its massive parts were machined to watchmakers' tolerances. Entirely new fabrication and inspection techniques had to be developed to make such precision possible.

Combustion's activity in the field of nuclear power has ranged from such civilian projects as Shippingport and the Fast Breeder Reactor vessel for the Enrico Fermi Plant* to the design and manufacture of a complete submarine reactor system and numerous components for our nuclear Navy. C-E's highly specialized personnel and extensive facilities for nuclear work will enable the Company to occupy as important a place in the future use of atomic fuels as it has long held in the field of conventional power generation.

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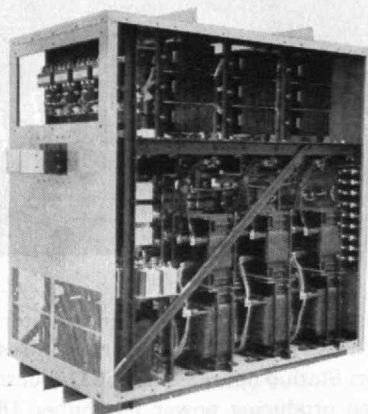
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HEVI-DUTY

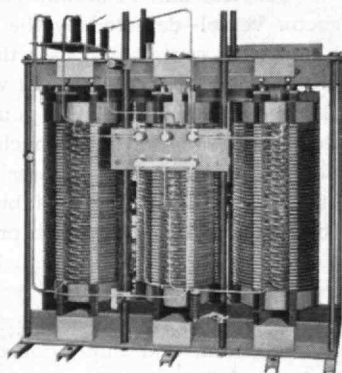
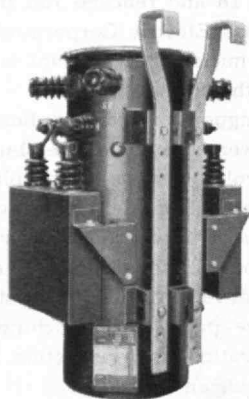
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TEST TUBE TO TABLE

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ent from that of an orange? What contributes to the difference between ripe bananas and green bananas?

Today we have available a host of new techniques: vapor-phase chromatography, counter-current distribution, infrared spectroscopy, ultraviolet spectroscopy. These and many other techniques may unlock the secrets which are so tightly held by nature within the cellular membranes of foods — the secrets of the flavor molecule. We, as are other laboratories throughout the country, are extremely active in this area, and feel that when we are able to unlock these tightly held secrets of nature — of what flavor is in different foods — we will then be able to produce for the American public optimal foods in terms of flavor. This is, I think, the biggest revolution now in the test-tube stage in terms of research.

In addition to this, we are active in pursuing other objective means of evaluating food quality. We now have developed electronic equipment in our laboratories for measuring texture electronically and for measuring color electronically, as well as other physical attributes.

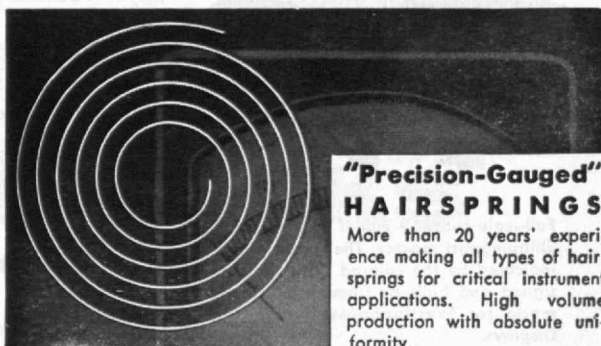
These, I think, are the important developments on the horizon today; and when I say horizons I literally mean that, for our two-week summer course for industry, given in the Department of Food Technology at M.I.T., is entitled "Horizons in Food Technology."

You may ask, what about the use of Chlorella? What about food yeast in our diets of tomorrow? It is true that these are being developed today beyond the test-tube stage and that they will provide some foods for undeveloped areas of the world.

For these undeveloped areas, there are other foods such as fish protein which will be available. But with the help of a divine Providence our standard of living will keep on increasing and our descendants probably will be just like you and just like me — still wanting to eat, in the year 2000, three square meals per day, preferably steak, chops, lobster.

There are many advances that science and technology will produce for us from the test tube of today to commercialization tomorrow. These advances will result in better life and better health for mankind through improved food and increased nutrition. If these things do occur, and we predict they may, it will be due in large part to the efforts of the food technologists who carry the new ideas to the

(Concluded on page 266)



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TEST TUBE TO TABLE

(Concluded from page 264)

test tubes, from there to the pilot plants and, eventually through production and distribution, to the American table.

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ADDENDA

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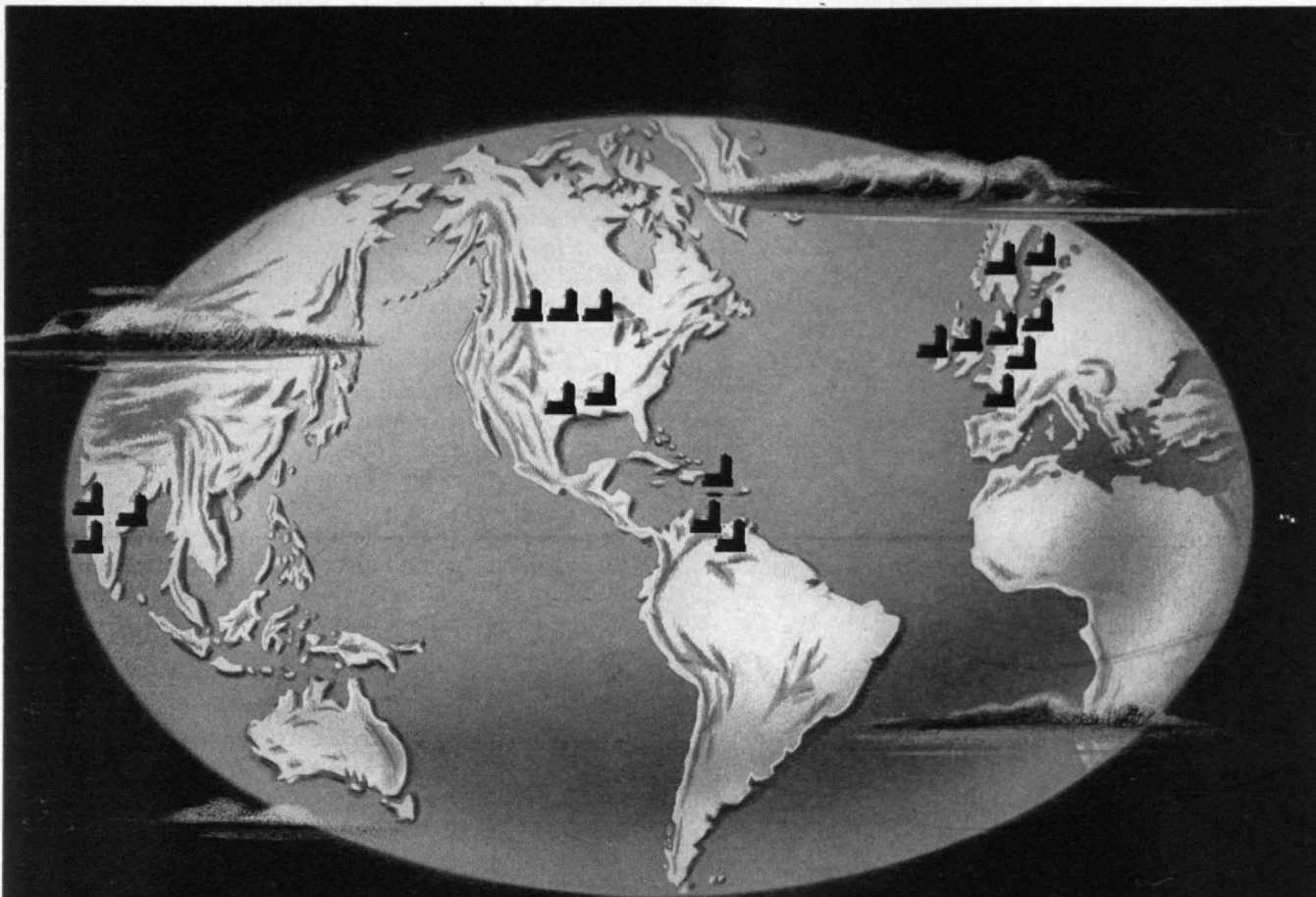
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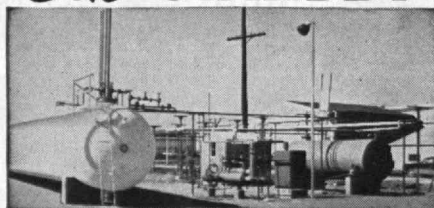
(Continued from page 252)

of graduate and postdoctorate research on a truly interdepartmental level with the principal needs of national defense. These centers should be devoted to broad fields of modern research and their long-range applications; the field of modern materials research, most familiar to the writer, is only one example. They would train graduate students and postdoctorate fellows, and simultaneously have postgraduate fellows from the Services rotating through on an annual basis. The work would be unclassified in keeping with university tradition and directed by a staff of outstanding experts ranging through all fields of science and engineering. This staff, while belonging to the faculty of the university, should be appointed by the center according to its needs with faculty approval. There will be no scarcity of excellent senior staff if we augment the younger generation with outstanding emeritus professors. The departments, in turn, will be strengthened by the influx of new talent which shares their teaching load.

A junior staff of corresponding excellence could be provided by revamping our antiquated draft system for the needs of this technological age. If a world war should ever break out again, it will be a desperate slugging match between the scientists and engineers of the contending nations, with the rest of the population as unhappy bystanders. The only sensible solution from the standpoint of preventive defense measures is therefore to let every student finish his

(Concluded on page 270)

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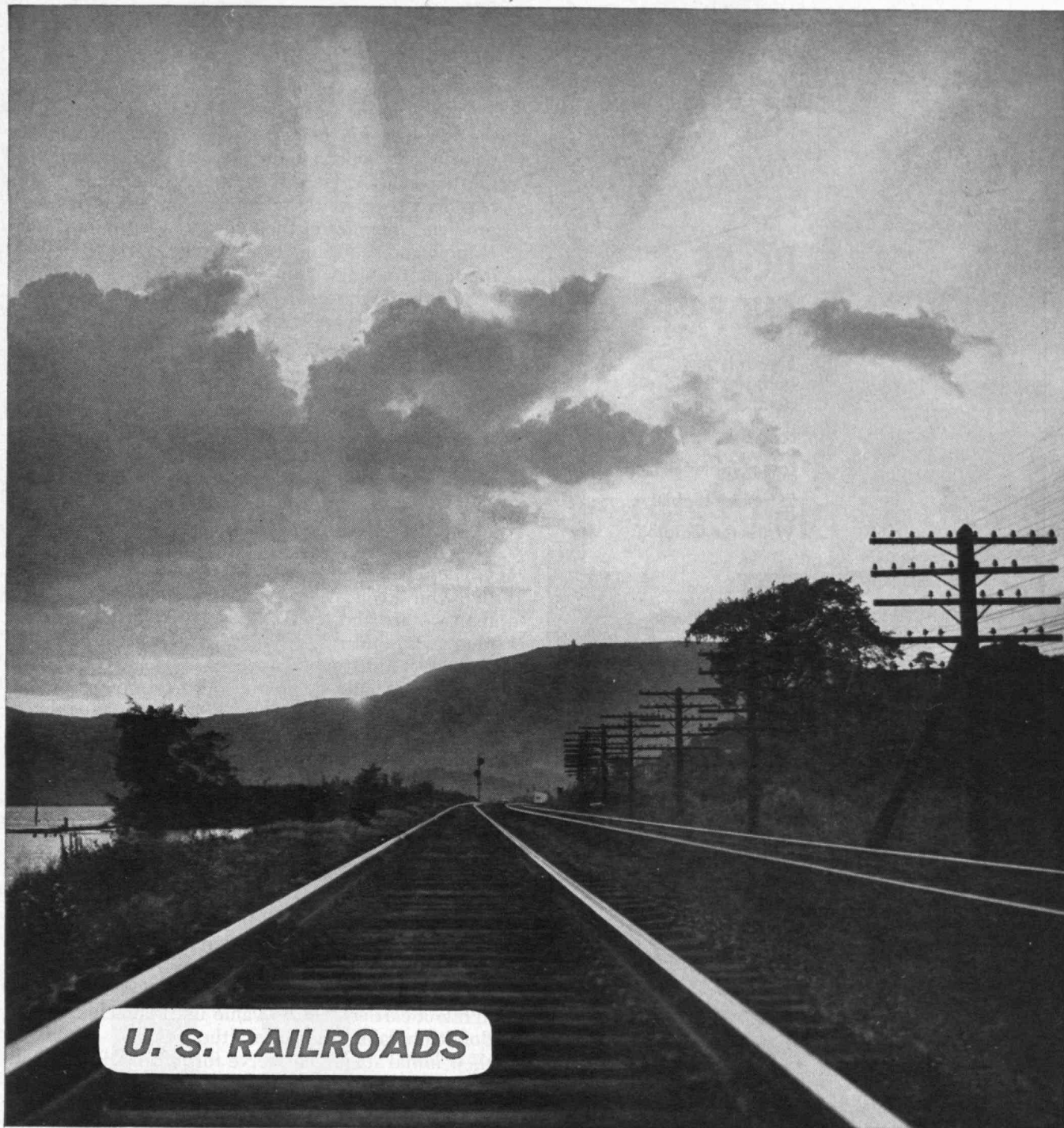
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ANSWERS TO SPUTNIK?

(Concluded from page 268)

education up to the highest degree for which he can qualify. These students should then be drafted for the services of their country with a competitive chance for positions in the federal research centers of the universities. Here they would contribute to the real defense strength by working on urgent research problems, helping in the education of the next generation, and acquiring in these years a thorough post-graduate training.

Such a program makes everybody the winner, including industry which would get much better men and competent advice when needed. Our inherent defense strength which rests on outstanding quality of men and weapons would be vastly improved; at last we would have also the information centers we need and not be caught napping again. This program should prove to be even self-financing by saving defense billions which are misspent now.

Emergency and Long-Range Planning

There is a desperate urgency in our present situation. Our adversary is politically much more cunning than we are and his technical strength is surpassing ours at a rapid rate. Shortly, we may be confronted with an ultimatum to surrender or be annihilated. This is the challenge, and against it our response has to be measured. How can a long-range program of creating federal research centers at the universities be justified on this basis?

In panic, at present we throw all available funds into the final production of missiles and rapidly antiquating hardware, while fundamental research is still starved for funds as before. We have to build new real strength into our nation. To create a number of prototype research centers at the universities or as regional centers for adjoining universities, under long-range guarantee by federal funds, will cost no more than one of the super-aircraft carriers we are building, and the task will take no longer to complete. While a carrier is of no value until launched and of doubtful value thereafter, the centers, already in their initial stages, can serve for information and advice, and later will be a mighty source for knowledge and defense. Our nation can still be safeguarded by scientists and engineers if they — not fettered by unessential tasks and red tape — are freed for an inspired effort combining emergency measures with long-range planning.



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TREND OF AFFAIRS

(Continued from page 250)

As part of the group of supplementary classroom aids which will be co-ordinated with the text, seventy 20-minute motion pictures on a wide range of physics topics are being prepared with the joint co-operation of Hollywood film producers and educators. A suburban Boston motion picture house, Loew's Watertown Square Theater (in Watertown, Mass.) has been leased by the Physical Science Study Committee for use as a studio in the production of these color sound films for classroom teaching. The films will be planned and written individually by leading physicists, including Nobel prize winners, at educational institutions and industrial laboratories across the country. Thus, a nationally recognized authority will be responsible for each film subject, although he will work in close association with professional motion picture men, producers, and writers.

While Hollywood producer-director Frank Capra will produce two of the films, the majority will be made by Encyclopaedia Britannica Films, Inc. By combining the efforts of a national committee of scientists and educators with the efforts of leading film producers, in the new revolutionary approach to teaching of high school physics, first-class physics teaching could become available to every high school in the nation.

Third speaker on this interesting program was John H. Marean, physics instructor in the Reno (Nev.) High School who took a year's leave of absence in order to work with the Physical Science Study Committee. Bringing to this program the point of view of the high school physics teacher, Mr. Marean described the reception the experimental program is now receiving in half a dozen schools which have voluntarily adopted the program for the current year. Next summer it is planned that about 250 high school physics teachers will meet at various universities throughout the nation to become familiar with the new program. From this core, it is hoped, the adoption of the new physics program can proceed somewhat more rapidly in the future. At present about a dozen private and public schools are participating in using and developing the new physics program. The private schools are less restricted in their programs of instruction than most public schools and are finding

(Continued on page 274)

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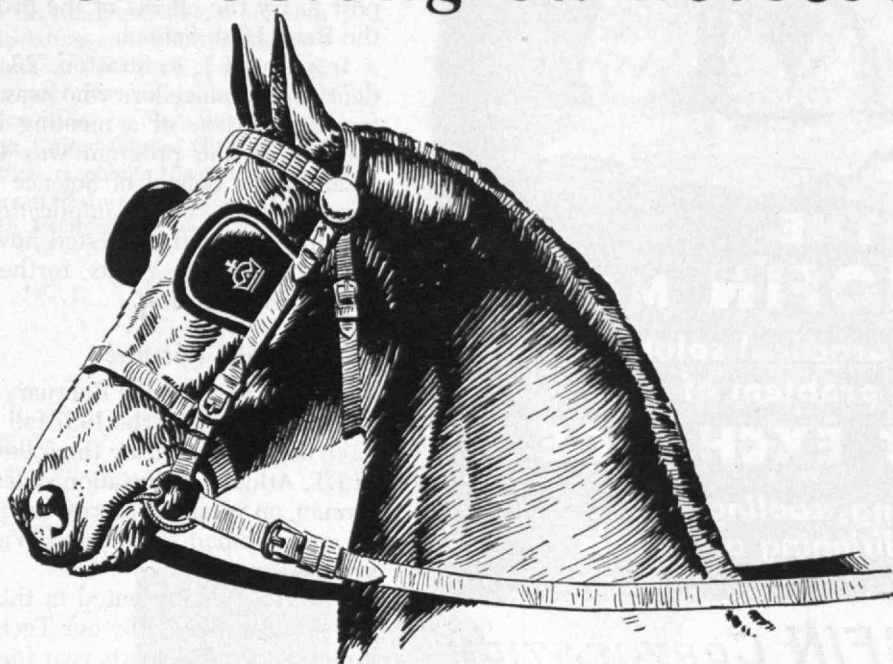
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TREND OF AFFAIRS

(Continued from page 272)

the new course a most stimulating one. Mr. Marean expressed his impatience to get back to his teaching post to try the effects of the program on students in the Reno High School.

In place of J. A. Stratton, '23, M.I.T. Acting President and Chancellor, who was prevented from attending because of a meeting in Washington, final speaker on the program was George R. Harrison, Dean of the School of Science at the Institute. Dr. Harrison spoke on the implications of the new teaching program, and suggested how Alumni and others might contribute to its further adoption and increased effectiveness.

Fall Athletic Résumé

■ As mentioned in the February issue of The Review, résumés of some of the 1957 fall athletic competitions have been prepared by the following members of the M.I.T. Athletic Association staff: Coach Charles Batterman, on varsity soccer; Coach Benjamin R. Martin, Jr., on freshman soccer; and Walter C. Wood '17, on sailing.

The résumés presented in this issue point out the fine spirit displayed by our Tech teams, which led to a most successful sports year for the Institute.

Soccer

Varsity—The varsity soccer team started practice a week and a half before school officially began. Through a plan initiated last spring, members of the squad and qualified freshmen were invited to come back early for pre-school practice. The response was fairly good. We practiced twice a day for one and a half hour sessions. This proved very helpful in many ways: I got to know the boys, none of whom I had met before; they got to know each other; and we worked on fundamentals.

What started as an apathetic group (not reporting to practice on time, and not reporting to practice at all) slowly became, as the days went by, a more responsible one. There was plenty of talent, and they were beginning to play together. Our first game at Amherst was the opening test of a tough schedule. At the start of this game, Tech controlled the ball for the whole first quarter but did not score; Amherst

(Continued on page 276)

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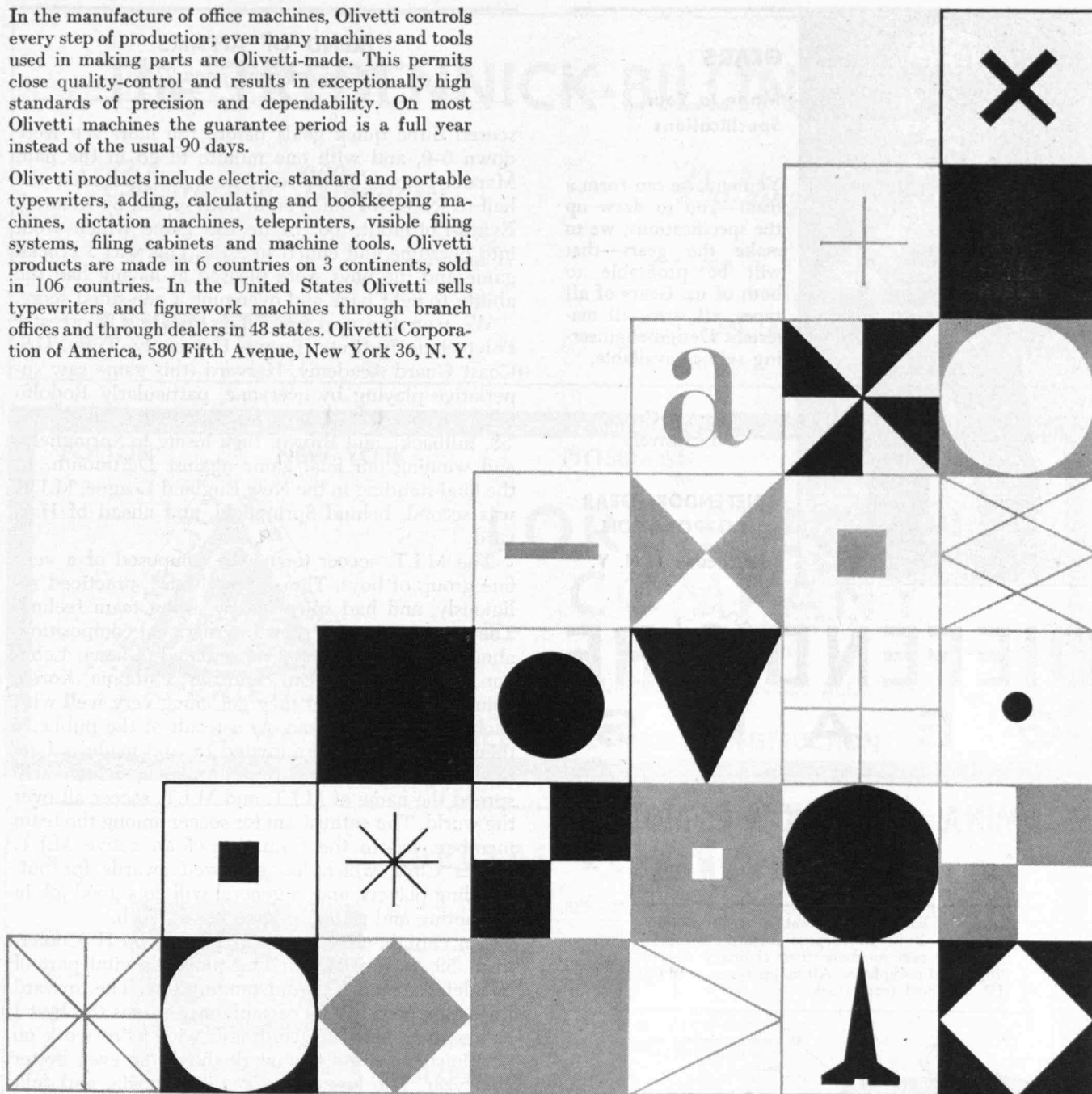
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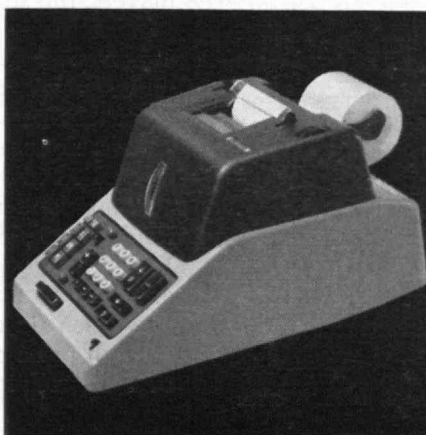
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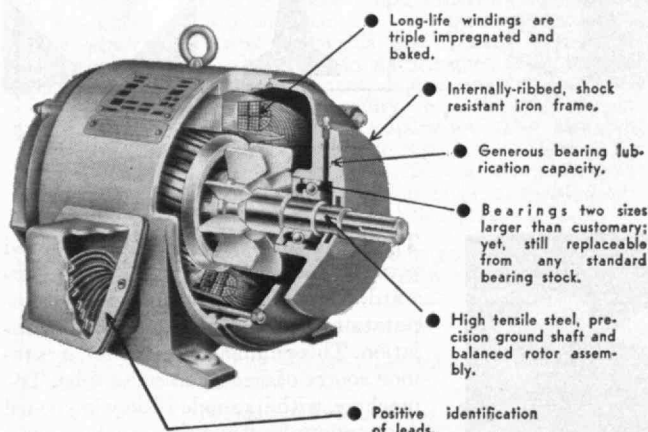
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TREND OF AFFAIRS

(Continued from page 274)

scored three quick goals before the half. We were down 3-0, and with one minute to go in the half, Manoel Penna, '60, scored. We came back after the half to score two quick ones, both scored by Kenneth Evans-Lutterodt, '60, to tie the game which went into overtime and ended in a tie. This was a crucial game and the boys were pleased at having had the ability to fight back and overcome a one-sided score.

We won the next six games, beating Worcester Polytechnic Institute, Boston University, Tufts, U.S. Coast Guard Academy, Harvard (this game saw superlative playing by everyone, particularly Rodolfo Segovia, '58, the goalie, and Sivavong Changkasiri, '58, fullback), and Brown; then losing to Springfield; and winning our final game against Dartmouth. In the final standing in the New England League, M.I.T. was second, behind Springfield, and ahead of Harvard.

The M.I.T. soccer team was composed of a very fine group of boys. They worked hard, practiced religiously, and had spirit and a strong team feeling. They were unique in their international composition, about 15 countries being represented (Ghana, Lebanon, all South American countries, Esthonia, Korea, Siam, and so on), and they got along very well with each other and with me. As a result of the publicity they received, we were invited to, and made, a tape recording for the Voice of America, which will spread the name of M.I.T. and M.I.T. soccer all over the world. The enthusiasm for soccer among the team members led to the formation of an active M.I.T. Soccer Club, which has endowed awards for outstanding players, and in general will do a good job in promoting and publicizing soccer at Tech.

Our captain-elect for next season, John H. Comerford, '59, was an outstanding player, a vital part of our defense, and is an outstanding boy. The forward line, composed mostly of sophomores, was the best I had seen in New England, and with more work on positional play and teamwork should be even better next year. The loss of our goalie, Segovia, and fullback, Changkasiri, will be felt.

This was a most successful season, not only record-wise, but also in the strong team feeling developed, and the interest shown in M.I.T. soccer by the players, the students, and many of the Faculty.

Freshman — The recently completed freshman soccer season again proved that there is nothing quite as important as high-grade material when it comes to establishing a winning team. The Beaver yearling booters skinned shins with seven opponents and won three, tied two, and lost two games.

Wins were recorded at the expense of Medford High School, Windham College, and Tufts Freshmen. Exciting ties were played with Harvard Freshmen and Phillips Exeter Academy. Losses were to Brown Freshmen (in overtime) and Andover Academy.

High point of the season was the unexpected win over Tufts Freshmen in the final game. In this contest

(Concluded on page 278)

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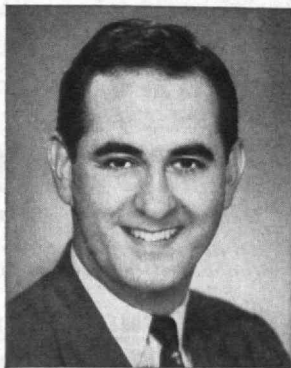
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TREND OF AFFAIRS

(Concluded from page 276)

the Baby Beavers tied the game in the last 20 seconds and won in overtime.

Sailing

The sailors, led by team captain William S. Widnall, '59, and C. Dennis Posey, '59, have had a successful fall season, winning the U.S. Coast Guard Academy Quadrangular, the Jack Wood Pentagonal, the Henry B. Nevins Trophy, the Erwin H. Schell Trophy, and the newly created Sloop Championship — sailed in Ravens at Coast Guard Academy. They finished fourth in the Danmark Regatta and third in the Oberg and War Memorial Trophy Regattas, all of which were won by Boston University sailors, who now have a fleet of Tech dinghies on the Charles River. M.I.T. finished third behind Brown and Yale Universities at Providence in the C. Sherman Hoyt Regatta, the only major event not won by Tech or Boston University.

During the summer months, Posey won the Massachusetts Bay Monotype Championship and, sailing under the Nautical Association burgee and with an all-Tech crew, captured the Benson Trophy, emblematic of the Senior Men's Championship of Massachusetts Bay. In the New England Championship, he lost by a single point to George D. O'Day who went on to win the Mallory Cup, emblematic of the Men's Senior Championship of the United States. Also during the past season, Posey won the Atlantic Coast Thistle Championship and, with coed Carol M. Dorworth, '60, as crew, sailed one of the Tech Fireflys to the North American Firefly Championship in a field of 27 boats at Seneca Falls, N.Y.

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and the prophet replied:
*"It is well to give when asked, but it is
better to give unasked, through understanding."**

Gifts by Will

TO THE Massachusetts Institute of Technology

The tale is told of Almustafa, the prophet, who, having awaited for many years the ship that would return him to the place from whence he came, was making the final descent to the shore when the folk of Orphalese crowded about him. They besought him before departing to "disclose us to ourselves, and tell us all that has been shown you of that which is between birth and death."

With words of wisdom, an answer appropriate was given to the woman holding a baby, to the ploughman, to the merchant. Begged one, "Speak to us of GIVING," and the prophet replied:

"It is well to give when asked, but it is better to give unasked, through understanding;

And to the open-handed the search for one who shall receive is joy greater than giving. All you have shall some day be given;

Therefore give now, that the season of giving may be yours and not your inheritors'."

Through the years the prophet's words have held true, for even today he who "through understanding" includes the MASSACHUSETTS INSTITUTE OF TECHNOLOGY as a beneficiary in his will can experience thereby a two-fold satisfaction. The successful culmination of his search for a worthy recipient and the anticipated results his generosity will assist in accomplishing. These satisfactions give an added value to the span of man's days and project his usefulness to his fellowmen far into the future.

The Massachusetts Institute of Technology because of the high quality of the education given its students, its effective research work for aiding America in peace as well as in war, and the high character of its governing body and academic staff qualifies as an institution for serving our American ideals for the present and in the years to come.

But the search, the finding, and the anticipated accomplishments are not enough; for without the properly-worded record, man's plan for the future may go awry. Hence the prophet's importuning, "— give now," should be heeded. The giving need not be an immediate physical transaction, for written directions replace the spoken word when the speaker is no longer present, and a donor can frequently make by will a gift which is larger than he can make while living. Truly, *"it is well to give when asked, but it is better to give unasked, through understanding."*

A booklet "Gifts by Will," outlining different forms of bequests to M.I.T., is available to you or to your attorney by writing to:

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* "The Prophet" by Kahlil Gibran

ALUMNI AND OFFICERS IN THE NEWS

Progressive Promotions . . .

In addition to the 38 Alumni recorded on page 248, other Alumni advanced to new posts include:

ELMER ANDREWS'27 as manager of building services, Eastman Kodak Company . . . HUBERT B. WHITING'29 as operating manager, New England Division, Socony Mobil Oil Company . . . HORACE B. PREBLE'30 as chief, Standards Department, Hendrick Manufacturing Company.

ALBERT H. COOPER'31 as chairman, Department of Chemical Engineering, Pratt Institute . . . EDWARD B. HUBBARD'31 as assistant vice-president, Coffin and Burr, Inc. . . . SIDNEY M. EDELSTEIN'32 as a member, Advisory Board, American Chemical Society.

SAMUEL UNTERMYER, 2d,'34 as operations manager, Vallecitos Plant, General Electric Company . . . CHARLES E. TRECOTT'36 as manufacturing manager, Zenith Plastics Company, Gardena, Calif. . . . JOHN C. HITT'37 as vice-chairman, Boston Section, American Institute of Electrical Engineers.

HOWARD C. NESS'38 as manager, Cost and Statistics, American Steel and Wire Division, United States Steel Corporation . . . RALPH N. THOMPSON'40 as manager, Chemical Research and Development Department, Hagan Chemicals & Controls, Inc. . . . JAKE T. NOLEN'41 as manager of the new technical section for process and technical development of "Mylar" polyester film, Circleville (Ohio) Plant, E. I. du Pont de Nemours and Company.

THOMAS H. DERBY, JR., '43 as sales co-ordinator, Film Division, American Viscose Corporation . . . JAMES E. McLINDEN, JR., '43 as engineering section head, High Power Klystrons Engineering Department, Electronic Tube Division, Sperry Rand Corporation . . . ALEXANDER BROWN'44 as assistant director—research, Bakelite Company Division, Union Carbide Corporation.

DEWEY H. NELSON'44 as assistant manager, Becco Chemical Division, Food Machinery and Chemical Corporation . . . GEORGE B. HETRICK, JR., '45 as manager, Armstrong Contracting and Supply Corporation, St. Louis, Mo. . . . HENRY M. MORGAN'48 as assistant director, Fabric Research Laboratories, Inc.

GERALD G. FISCH'50 as executive vice-president and managing director, Payne-Ross, Ltd. . . . WALTER R. GERICH'50 as chief engineer, Maryland Shipbuilding and Drydock Company . . . MYLES S. SPECTOR'50 as sales manager, American Gelo Electronics, Inc., New York City.

H. RICHARD JOHNSON'52 as vice-president, Watkins-Johnson Company, Palo Alto, Calif. . . . WILLIAM J. SADLOWSKI, JR., '53G as manager of economics and sales analysis, Plastics Division, Monsanto Chemical Company . . . ROSWELL L. DERBY'54G as personnel director, William Filene's Sons Company, Boston . . . NEAL O. WADE, JR., '56 as district plant super-

intendent, Long Lines Department, American Telephone and Telegraph Company, Cincinnati, Ohio.

Periodical Appearance . . .

The following technical papers by Alumni have appeared in print during the past few months:

"X-Ray Study of Faults in Body-Centered Cubic Metals" by BERTRAM E. WARREN'23 and OTTO J. GUENTERT'56G, *Journal of Applied Physics*, January, 1958 . . . "Hardness Tests Help Control Quality" by VINCENT E. LYSAGHT'24, *American Exporter Industrial*, November, 1957. "Simple Electrometer Employing an Electrified, Nonconducting Fiber" by BERNARD VONNEGUT'36, *Review of Scientific Instruments*, December, 1957 . . . "Barium Absorption Pumps for High-Vacuum Systems" by ROBERT W. CLOUD'37, Lars Beckman, and JOHN G. TRUMP'33, *Review of Scientific Instruments*, November, 1957.

"Aerodynamic Heating Simulator for Transducer Development" by JOSEPH I. MASTERS'49 and Milton S. Cohen, *Review of Scientific Instruments*, December, 1957 . . . "Coils for the Production of High-Intensity Pulsed Magnetic Fields" by HENRY H. KOLM'50 and SIMON FONER, *Review of Scientific Instruments*, October, 1957.

"Fast Timing Apparatus for Measuring the Arrival Directions of Cosmic-Ray Air Showers" by GEORGE W. CLARK'52, *Review of Scientific Instruments*, November, 1957 . . . "Point-Focusing Two-Crystal X-Ray Monochromator of X-Ray Diffraction" by THOMAS C. FURNAS, JR., '52, *Review of Scientific Instruments*, December, 1957.

Obituary

EDWARD V. FRENCH'89, December 19°
WILLIS R. WHITNEY'90, January 9
CHARLES W. SHERMAN'90, January 17
JAMES W. BLACKMER'91, January 10
HARRY H. YOUNG'91, December 26°
LOUIS A. FREEDMAN'96, December 1°
JOSEPH E. OWENS'96, January 2°
EDWARD M. TAYLOR'98, October 31
MILES S. RICHMOND'99, December 23°
LAWRENCE C. SOULE'99, December 16
SALVADOR MADERO'00, December 17
THEODORE A. BALDWIN, JR.'01, December 1

JOHN M. FITZGERALD'02, November 19°
FARLEY GANNETT'02, January 20
HERCULES W. GEROMANOS'02, December 16°

MAURICE GOLDENBERG'02, June 11°
WILSON P. HARRIS'02, December 18°
EVERETT H. KING'03, November 20°
PERRIE M. ARNOLD'04, November 28
CUTLER D. KNOWLTON'04, January 22
C. EDWARD MCKINNEY, JR., '04, October 21

AUGUST W. MUNSTER'04, January 14°
CLAUDE A. ANDERSON'05, December 17°
THOMAS SHAW'05, January 14

EDBERT C. WILSON'07, January 18
JACOB A. FOTTLER'08, August 16°
SYDNEY V. JAMES'08, November 14°
JAMES H. CRITCHETT'09, December 17°
MRS. GUSTAVUS J. ESSELEN (HENRIETTA W. LOCKE)'09, March, 1956°

ALLEN E. SHIPPEE'09, November°
DUANE S. SLATER'09, May 5°
HERBERT J. STIEBEL'09, December 7°
LEW M. ATKINS'10, October°
GUY N. HARCOURT'10, November 20°
THOMAS LARKIN'11, July, 1956
THORNE L. WHEELER'11, January 7, 1957
WALTER H. J. TAYLOR'12, November 14°
BENJAMIN B. TREMERE, JR.'13, 1956
ARTHUR B. DEWITT'14, December 27
HORACE C. STEWART'14, December 24
HOWELL TAYLOR'14, September 22°
WILLIAM R. McEWEN'15, December 25°
P. J. MUNN'15, August 23
GALE C. SHEDD, JR., '15, December 26
CHARLES W. LOOMIS'16, December 19°
GEORGE M. STEESE'16, November 23
DAVID E. PIERCE'17, January 22
MAURICE E. GELINAS'18, January 9
WALDEMAR S. MCGUIRE'18, January 24
JOHN A. PARKER'18, November 24
THEODORE F. HOBSON'20, December 25
ROLLIN F. OFFICER'21, March 25, 1957°
RUSSELL G. BELLEZZA'22, January 13
RUSSELL ROBB'22, June 3°
ARTHUR J. WILSON'23, October
LAWRENCE NOVACK'24, October 1°
ROBERT B. PICK'24, May 22, 1955°
NELSON D. MALONE'25, January
WILLIAM J. LIMPERY'25, January 10
ARTHUR R. MACLEAN'25, January 9
JAMES M. KAY'28, December 2°
JOSEPH J. ANASTASI'30, December 29
BERTRAM H. MACLEOD'31, January 19
JOSEPH F. WALKER'35, December, 1957
RICHARD K. WEST'38, December 18°
JOHN R. THOMPSON'42, December 18
HARLAND A. GRAY, JR., '46, December 30
HERBERT JACOBS, JR., '49, August 24°
EDWARD P. WILSON'53, January 8, 1957

*Further information in Class Notes

Anniversaries . . .

Among the Alumni to whom birthday congratulations are appropriate this month are WILLIAM C. BROWN'91, who is due to celebrate his 90th on March 7; six who will observe their 85th anniversaries; and seven, their 80th, as listed below with their respective dates of birth:

March, 1873 — ERVING E. STEVENS'96 on the 7th; ADELINE H. WHITESIDE'94 and ALBERT O. WIGHT'96 on the 14th; DAVID C. CHURCHILL'99 on the 17th; CHARLES H. SWEETSER'97 on the 20th; and PIERRE E. RICHARDS'96 on the 22d.

March, 1878 — LAWRENCE ADDICKS'99 on the 3d; RALPH HAMLIN'00 on the 5th; WALTER L. RAFF'00 on the 8th; LEVI B. JENNINGS'00 on the 12th; ROBERT W. STROUT'00 on the 19th; CARLOS SADA-MAGUERZA'00 on the 22d; and ROBERT H. LEACH'00 on the 30th.

With these 14, the rolls of the Alumni Association will include 60 living nonagenarians and 576 octogenarians.

NEWS FROM THE CLUBS AND CLASSES

CLUB NOTES

Boston Luncheon

The M.I.T. Luncheon Club of Boston met Thursday, December 19, 1957, at 12:15 P.M. at the Union Oyster House. 50 Alumni were in attendance to hear Houlder Hudgins, Professor of Industrial Management, a member of the School of Industrial Management at M.I.T.

He spoke on "Retailing - Catalyst of a Free World." He pointed out that the Christmas season emphasizes the strange and wonderful world of retailing when we see the hopes and plans of the suppliers meeting the hopes and plans of consumers at the store. To many of us this is another world.

The dimensions of retailing were described in terms of a 1957 gross national product of \$439 billion, providing a personal income of \$350 billion. Of this return, \$44 billion was spent for taxes; \$18 billion set aside for savings; and \$306 billion consumed in purchases, of which \$18 billion was provided for by time payments. He pointed out that this money is spent in 1,900,000 stores employing 11,700,000 people in addition to some 3 million proprietors.

Professor Hudgins stated that the objective of any economic system is to satisfy human wants; that human wants are consumer demand oriented; that the wants are met by production in the role of the technologist who is supply oriented. Basically, the role of the technologist starts with known demand, product conception, design, procurement, production or conversion and ends with shipment to an unknown consumer. Throughout this role, the key word is efficiency, with the whole train of operation geared to profit.

An interesting comparison was given between the Russian concept of retailing and ours. Little difference pertains to the supply side between ourselves and the Russians. On the other hand, a great difference exists on the demand side. In our country distribution is geared to what the consumer wants and will pay for; whereas, under the Russian system, distribution is geared to what the State thinks the consumer ought to have. The significant difference is that our system provides a profit incentive to the merchant which is roughly five per cent of total consumer purchases.

We have been able to build such a system with a smaller labor force - 71 million here versus 128 million in the Soviet Union. Under this system, we produce five times the consumer goods, develop about 54 per cent greater gross national product, and our population is better housed, better clothed, and better fed.

Thus, a bridge called "Retailing" under our system is provided between the producer and the consumer. - PARKE D. APPEL '22, *Secretary-Treasurer*, 28 Winthrop Road, Belmont 78, Mass.

Central Florida

The St. Petersburg Yacht Club was the scene of a very pleasant dinner meeting on November 8, 1957. Bill Mills '34, retiring Club President, expressed gratification at the good turnout of some 35 members and guests. Professor Bat Thresher '20 was the principal speaker of the evening and gave forth in his usual fine style on the current trends and status of admissions to the Institute. It has been a long time since many of us have been filled in on the details of present-day activities, and the changes in the intervening years are most remarkable. We were also fortunate in having Professor A. H. G. Dietz '32 of the Department of Building and Construction present to say a few words.

The principal item of business at the meeting was election of officers to replace retiring President Bill Mills and retiring Secretary-Treasurer J. J. R. Bristow '14. H. J. McGillivray '38 was elected President; Harold Radcliffe '41, Secretary; and D. J. Athan '54, Assistant Secretary. The following members were present: T. B. Mason '25; Nicholas J. Rompon '47; Harry C. Lord '08; Joseph W. Clary '96; Fred C. Earl '28; G. T. Feyling '35; Howard E. Hartman '46; Charles Walter '16; Bill Guild '13; Thomas P. Zurfliet '57; Lowell Wilson '57; D. H. Hayden '99; H. J. McGillivray '38; L. D. Nisbet '09; Charles W. Rogers '28; D. James Athan '54; Glenn E. Fargo '21; Harold Radcliffe '41; Donald Burke '46; E. T. Marceau '12; H. Y. Currey '02; G. R. Taylor '20; Richard S. Bicknell '10; Robert G. Hall '40; Gerald M. Keith '12; Thurston C. Merriman '09; Bill Mills '34; Carle McEvoy '38; J. J. R. Bristow '14; and E. E. Biel '43. - HAROLD RADCLIFFE '41, *Secretary*, 7525 Dartmouth Avenue North, St. Petersburg, Fla.

Kansas City

The M.I.T. Club of Kansas City held its first dinner meeting of the year November 6, 1957, at Wolferman's Empire Room. Professor William H. Dennen '42 from the Institute gave a very enlightening talk on the work and goals of the Admissions Office. The Alumni showed a great deal of interest and enthusiasm in this subject; we recommend it as a basis of a program at other M.I.T. clubs. Professor Dennen gave a nice talk which led into a worthwhile period of informal discussion. The Alumni attending were: B. J. Duffy, Jr., 10-'44; Bruce J. Ennis '33; J. Warren Evans '39; Barton L. Hakan '42; W. F. Hyde '99; F. J. Kearny '38; F. G. Lehmann '51; John T. Murphy '37; Richard Muther '38; John B. Nason, Jr., '23; L. L. Robinett, Jr., '36; John D. Rogers '42; and W. R. Wheeler '25.

At Christmas time the Club repeated the luncheon for students and fathers which was so successful last year. The meeting took place on December 28 at Wolferman's Empire Room. After visiting with the students, the Alumni were con-

vinced that the Admissions Office is doing an excellent job of student selection. Short talks on M.I.T. by two of the students and by several of the Alumni made up the program. A minority report by one of the Institute's sweet girl graduates, Mrs. Fred G. Lehmann '54, stole the show. The following students and their fathers were present: James G. Allen, James T. Allen; J. W. Bulkley, Peter Bulkley '55 (brother); Leonard E. Carr, Jr., Leonard E. Carr; Robert E. Brown, Albert W. Brown; Bill Daly; Lee Giesecke, W. Marshall Giesecke; Robert S. Kennedy, Kirk Kennedy; Robert S. Lemon (father-in-law); Robert B. McLean, John McLean; Douglas R. Miller, R. G. Miller; J. J. Randazzo, Jr.; Donald L. Robbins, L. D. Robbins (uncle); Ronald M. Sundelin, Ronald R. Sundelin.

The Alumni attending were Paul Cotter '57; B. J. Duffy, Jr., 10-'44; T. R. Egger '50; J. Warren Evans '39; Barton L. Hakan '42; Robert T. Howard, Jr., '42; William F. Hyde '99; J. C. Irwin '18; B. J. Kirkwood '49; A. C. Kirkwood '24; Betty Ann Lehmann '54; Fred G. Lehmann '51; Ed Martin, Jr., '51; John T. Murphy '37; John B. Nason, Jr., '23; Luigi L. Robinett, Jr., '36 and his son; and W. R. Wheeler '25. - B. J. DUFFY, JR., 10-'44, *Secretary*, 6521 Tahoe Lane, Kansas City 3, Kansas.

Milwaukee

Your Secretary has been very remiss in not sending through club notes. In spite of this, the M.I.T. Club has been very active during the fall and winter of 1957-58. Our monthly luncheon meetings have been held at the University Club of Milwaukee the second Tuesday of every month, without a miss. Our attendance has varied between 15 and 20 Alumni.

Thanks to the hospitality of John Koch '53, the year's program started with our annual picnic held at his estate on Pewaukee Lake. A total of 83 people attended, including 24 families.

Our fall program started out with a dinner meeting on November 20, to which we invited educators and counselors from high schools and preparatory schools. At this meeting we decided to do an "about face" and invited Mr. Sanford Cobb, Jr., Class of '57, to give a talk about M.I.T. as seen through the eyes of a student and recent graduate. The Minnesota Mining Co., where Mr. Cobb is employed, kindly gave him a day off so that he could come down from St. Paul and talk to us.

On December 30 we had our annual Christmas Luncheon for M.I.T. students.

Our first dinner meeting of 1958 took place on January 15. We were very fortunate in being able to have Professor Draper '26 talk to us that evening on inertial guidance systems. This meeting was held at the Milwaukee Athletic Club.

The following faces are most frequently seen at our meetings. As this list is made from memory, it is very possible that I left out several active members: Mike

Alexander '53, George Anderson '24, John Ballard '35, Bill Bohlman '49, Tom Duke '49, Bill Fincke '51, Chuck Haeuser '51, Arthur Hall '25, Harold Koch '22, John Koch '53, Wallace McKinnon '49, Paul Meredith '50, Chet Meyer '36, Jack Monday '51, George Pollock '21, James Ricketts '53, Bill Schield '46, Dave Smith '31, Charlie Sollenberger '10-'44, Elton Staples '26, Emerson Van Patten '24, John Waferling '35. — JACK COLBY '35, *Secretary*, Johnson Service Co., 507 East Michigan Street, Milwaukee 1, Wis.

New York

"Industry's Stake in Atomic Energy" was the subject chosen for a panel discussion at the annual winter Technical Dinner sponsored by the Club on February 6. The dinner, organized by Chairman Tony Hittl '36, was held in the main ballroom of the Hotel Biltmore. Serving as moderator was Dr. Manson Benedict '32, Professor, Department of Physics at M.I.T., and also in charge of the M.I.T. nuclear reactor. The speakers representing various industries were as follows: Dr. Chauncey Starr, Vice-president of Atomics International, Division of North American Aviation, who spoke for the equipment manufacturers; Dr. L. M. Currie, Vice-president of Union Carbide Nuclear Company, who spoke for the chemical processing fields; and Mr. Phillip Sporn, President of American Gas and Electric Corporation, who spoke for the public utilities.

The Technical Dinner is always one of the high lights of the season; and this year the excellence of the panel and the interest already evidenced early in January indicated that all previous attendance records would be broken.

Membership continues to grow with out-of-towners accounting for a large segment. Just today, M. Curtis Kinney '11 dropped into the Club for lunch and immediately joined. Mr. Kinney hails from Mount Vernon, Ohio, where he is chairman of the board of the J. S. Ringwalt Company. He will use the Club as his headquarters when in New York.

A large cocktail party for graduates of Classes 1950-1957 will be held at the Club this month. We are striving to make the Club a center for all Alumni, and particularly the younger Alumni.

Why not drop in and join next time you are in the vicinity? The Club quarters are on the first floor of the Hotel Biltmore, Madison Avenue and 43rd Street. Luncheon is served daily and cocktails are always available. — ROGER G. BLUM '41, *Secretary*, 285 Old Colony Road, Hartsdale, N. Y.

Northern New Jersey

Colonel John P. Stapp, Chief of the Aero Medical Field Laboratory of the Air Force Missile Development Center, Holloman Air Force Base, New Mexico, was the guest speaker at the meeting of the M.I.T. Club of Northern New Jersey on February 3. The talk was illustrated with both movies and slides.

Colonel Stapp is best remembered as the fastest traveler on the earth's surface. He achieved a speed of 632 miles per hour on a rocket sled in 1954 and was brought

to a stop from that harrowing six-second ride with a force of 40 G's (40 times the force of gravity). This trip, which was made for the purpose of determining the effects of high speed and acceleration on the human body, did not produce any permanent ill effects, although it did result in visual blackout and ruptured blood vessels in the eyes at the time.

Colonel Stapp also supervised the ascent of Major David G. Simons in a balloon to the record altitude of 102,000 feet last August. — LOUIS F. KREEK, JR. '48, *Assistant Secretary*, 82-B Woodland Road, Short Hills, N. J.

Northern Texas

The annual M.I.T. Christmas party was held jointly with the Fort Worth Club on December 17 in the banquet room at Amon Carter Field, midway between Dallas and Fort Worth. The weather was balmy; and after a convivial cocktail hour, all were in good spirits for the hearty dinner. Our honored guests were Mr. and Mrs. H. E. Lobdell '17, who warmly greeted their many Texas friends. After dinner, Lobby gave us one of his inimitable rambling discourses on current events at the Institute and his recent tour of Alumni Clubs in Europe. He concluded with a description of the events to be held at the forthcoming M.I.T. Fiesta in Mexico.

Russ Clark '29, President of the Dallas Club, presided in the absence of Fort Worth's George Grogan '48. Plans to hold next year's joint party at the new Western Hills Inn were approved. Tentative plans for a spring outing of the Dallas Club were also discussed. The oldest member present, W. M. Gilker, Class of '03, received a round of applause. The pleasant evening concluded with the showing of a beautiful film on the record-breaking flights of the Chance Vought F8U-1 fighter airplane.

About 50 members, wives, and other guests attended from the Dallas area and about 25 from the Fort Worth area. Members of the M.I.T. Club of Northern Texas attending included: Linwood P. Adams '42; Royden S. Bair '50; Robert F. Bean '50; Frank Bell '10; J. Russell Clark '29; Robert M. Edholm '45; James L. Fischer '55; Robert A. Fisette '50; John J. Freiberger '45; William M. Gilker '03; Irwin J. Grossman '52; Chester R. Haig, Jr. '40; Robert E. Harrison '47; Thomas E. Huffman '23; Mrs. Louie H. Lahee '18; John Lawrence '32; Bob Lichten '43; Douglas A. Nettleton '25; Jonathan A. Noyes '12; Enslie O. Oglesby, Jr. '47; R. A. Ormiston '48; Ras Senter, Jr. '17; Charles F. Terry '53G; John J. Welch, Jr. '51; and Louis B. Wadel '46. — ROBERT L. LICHTEIN '43, *Secretary-Treasurer*, 6338 Aberdeen Avenue, Dallas 30, Texas.

Quebec

Donald P. Severance '38, *Secretary-Treasurer* of the M.I.T. Alumni Association, accompanied by his wife, dined with the M.I.T. Club of Quebec at the Berkeley Hotel in Montreal on January 9. Don gave the members of our Club interesting news about M.I.T. and also about the M.I.T. Alumni Canadian Trust Fund, which was recently incorporated. Mem-

bers present were informed that Dr. James R. Killian, Jr. '26, would be their next guest on January 25.

The dinner was presided over by Henri Audet '45, President of the Club. The following members of the Club were present, most of them accompanied by their wives: Syed Alvi '50, Henri Audet '45, Norman H. Bell '35, Norman E. Cooke '56G, Aimé Cousineau '16, R. B. Graham '39, S. J. Hungerford '33, Emilien Langevin '30, René Laplante '30, Jacques Laurence '40, Pierre Lauriault '55G, Frank B. Lee '49, Florian Leroux '45, Kenneth B. Lucas '32, Kenneth Marshall '41, James F. McKay '49, Harold C. Pearson '23, Jean R. Portelance '37, Jean M. Raymond '34, C. A. Robb '10, A. D. Ross '22, Laval Samson '56G, A. T. Eric Smith '21, J. N. Stephenson '09, and Francis J. Turpin '57G. — JACQUES R. LAURENCE '40, *Secretary-Treasurer*, 1430 St. Denis Street, Montreal 18, Canada.

Rochester

Further details concerning our annual Christmas Luncheon reported briefly in the February issue are in order. This was the largest of these annual functions which we have had, with a total attendance of 100 people. 18 students now at M.I.T. were guests of the Club, along with 18 high school seniors from our area high schools; 64 Alumni were in attendance to greet the high school and M.I.T. students. One additional father and son combination not reported last month is Hugh Wynd, special graduate student, son of Clarence Wynd '27.

Bill Summerhays '41 and Evan Edwards '37 attended the Pittsburgh Regional Conference and obtained valuable information for use by our group when a regional conference is planned for Rochester. Chuck Buik '45 has organized an M.I.T. ski week end for the many ski enthusiasts of the Club. — JAMES K. LITTEWITZ '42, *Secretary*, 191 Rogers Parkway, Rochester 17, N. Y.

South Florida

Professor B. Alden Thresher '20, Director of Admissions of M.I.T., was the guest speaker at a dinner meeting of the Club on November 13, 1957, at the McAllister Hotel in Miami. Some 50 members and guests listened to a very interesting address on the changes in teaching methods during the past two decades, changes whereby M.I.T. has evolved from a school of engineering to a university of science and physics, with some 40 per cent of its students in the graduate school. He spoke of revisions of high school science textbooks now being undertaken by Tech with National Science Foundation financing, in order to bring 19th century teaching up to date. He said that, in contrast with conditions a quarter of a century ago, Tech is now a residence college, with by far the larger number of its students coming from distant places. This fact, combined with the newer methods of teaching and increased athletic and social activities, tends to give the graduates a broader base for their future lives. Professor Thresher also spoke of the work of some 700 Alumni throughout the nation

who, as members of the Educational Council, are maintaining contact with the high schools in their localities; he stated that some 80 per cent of the new students come from public high schools. His address was followed by a question and answer period.

Present at the meeting were several guidance officers and teachers from the local high schools. Besides Professor and Mrs. Thresher, the following Alumni were present: Ralph C. Robinson'01, Kenneth P. Armstrong'10, Estus H. Magoon'14, Frederick B. Philbrick'18, Edward I. Mandell'21, C. P. Thayer'23, David Kaufman'23, Robert J. Yaffey'23, Cecil G. Young'23, Thomas E. Mattson'24, Lloyd J. Porter'24, Richard L. O'Donovan'27, Alexis B. Kononoff'29, David W. Gurton'30, Warren H. Martell'30, Meyer A. Baskin'34, Jack Platt'34, James B. Wadhams'34, John J. Ostlund'35, Vincent J. Dobert'36, Robert Nedbor'37, Irving Peskoe'39, William Sussman'40, Irving Steinhart'48, and David N. Leslie'54. Ken Armstrong, President of the Club, presided; and Dick O'Donovan, Chairman of the Educational Council, introduced the speaker. — DONALD LEE BROWN'51, *Secretary*, P. O. Box 724, Coral Gables 34, Fla.

Virginia

The M.I.T. Club of Virginia met at the Commonwealth Club on November 12, 1957, for its first meeting of the 1957-1958 season. The nominating committee submitted the following slate of officers, which was duly elected unanimously: Richard H. Catlett'17, President; Robert B. Mills'33, Vice-president; Schrade F. Radtke'40, Secretary; and Garland S. Sydnor, Jr., '49, Treasurer.

President-elect Catlett called upon Dr. Radtke to introduce our guest speaker, Nicholas J. Grant 2-'44, Professor of metallurgy at the Institute. A timely and extremely interesting discussion of Professor Grant's recent visit to Russia was presented. It covered not only the status of Russian technical development in the ferrous industry and their academic institutions, but also the social and economic status of the country. An extensive questioning period followed the talk. Professor Grant's presentation was heralded as the most interesting and successful the Club has yet held. — SCHRAGE F. RADTKE'40, *Secretary*, 1106 Lake Avenue, Richmond, Va.

Washington

We are all looking forward to the first regional conference to be held in the Washington area. The date is set for Saturday, March 1, and it will be held at the Shoreham Hotel in Washington, D. C.

It will be a gala, all-day affair featuring a series of noted speakers from the Institute speaking on the general theme, "The Outlook of Science in America." Registration will begin at 9:00 A.M.; and in addition to the speakers, there will be a luncheon, cocktail hour, and banquet.

Dr. Killian'26, now President Eisenhower's Special Advisor on science, will highlight the dinner with the principal address, on "Science Requirements for Survival in Peace." He will be introduced

by M.I.T. Acting President Julius Stratton'23. Speakers during the day will be Dean George Harrison, Professor M. Stanley Livingston, Professor E. P. Little, and others, speaking on the use of the multi-million dollar tools of science, such as the high-voltage generator; a new curriculum for high school physics; and other subjects not yet firm at the time this is written. All regional area Alumni should have received invitations.

The large effort behind this undertaking has been the work of a hard-working committee chairmanned by Thomas Meloy'17, ably assisted by Robert W. Blake, Jr., '41, Vice-chairman; Thornton Owen'26, Publicity Chairman; Charles S. Butt, Jr., '41, Arrangements Committee Chairman; Adolphe H. Wenzell'17, Financial Committee Chairman; Francis DuPont'17, Invitations Committee Chairman; plus many others.

The annual Christmas Luncheon took place on December 27 at the Army-Navy Club. 14 local prospective Tech Freshmen were guests of the Club. These men were selected by educational counselors of the high schools in the local area. Total attendance was about 65, including 20 students. The luncheon featured a talk by Dad Wenzell, Vice-president of the World Bank. Also, Allen Philippe, a senior at M.I.T., addressed the group on athletics; and Ritchie Coryell, on student activities. The Club apologizes to those local students who did not receive invitations. It was our intention that all M.I.T. students in the local area be extended invitations; but due to a clerical error in the preparation of the mailing lists, some students inadvertently did not receive invitations. See you there next year — the Club plans to make it a yearly affair at the Army-Navy Club. — CHESTER N. HASERT'41, *Review Secretary*, 2475 Virginia Avenue, N. W., Washington 7, D. C.

CLASS NOTES

1889

As the Class has no official secretary, his classmates and *The Review* are indebted to Mrs. William M. Edmonstone, his former secretary, for the following account of Edward V. French's life.

Edward V. French died on December 19 at his home in Andover, Mass., after a long illness. He retired in 1946 after a notable career of over 55 years in the fire protection field — 23 of them as president of the Arkwright Mutual Fire Insurance Company of Boston and three as chairman of the Board. The Arkwright Company is one of the Associated Factory Mutual Fire Insurance Companies, pioneers in the fire protection field.

A native of Lynn, Mass., Mr. French graduated from Tech in 1889. Following three years in industrial plants and as an instructor at Tech, he joined the Factory Mutual organization. Under the leadership of the late John R. Freeman'76, he was instrumental in developing and building up the fundamental engineering standards of the Factory Mutuals. He had unusual knowledge covering many lines

of engineering, working on the so-called "Nashua Experiments" to determine the friction loss in pipes for automatic sprinkler systems. Mr. French did other hydraulic testing, and his studies on the increasing application of electricity in industrial plants resulted in some of the early rules for safe electrical installations and were the forerunner of the National Electrical Code.

In 1906 Mr. French became vice-president and engineer of the Arkwright Company. During World War I, he entered the United States Army as a major and had charge of fire protection for the enormous depots of supplies, large hospitals, and other Army property in France. His war duties over, Mr. French returned to the Arkwright Company and became president in 1920, continuing in this capacity until he became chairman of the Board in 1943.

To him much credit is due for the development of the Factory Mutual System. Putting his zeal and initiative to work, Mr. French and his associates proved that the fire hazard in mills and factories could be controlled, the interruption of business prevented, and the cost of insurance reduced to extremely small figures. He had a deep and special interest in the maintenance of the fundamental principles which made the Factory Mutual System a truly unique institution.

Until his long illness, Mr. French had continued as a director of the Arkwright Mutual Insurance Co.; he was also a director of the Brockton Edison Co. and a trustee of the Eastern Utilities Associates and of the Andover Savings Bank. He was a member of the American Society of Mechanical Engineers, the American Society of Electrical Engineers, the American Water Works Association, the New England Water Works Association, the National Fire Protection Association, the Society for the Protection of New Hampshire Forests, the Old South Corp., and the American Legion. His clubs were the Engineers Club of Boston, the Whiting Club of Lynn, the North Andover Country Club, the Down Town Club, the Episcopalian Club, the Lynn Historical Society, the Andover Historical Society, and the Appalachian Mountain Club.

Mr. French had always been active in Andover town affairs and for some years was chairman of the Finance Committee. Before his retirement, he gave much time and valuable help to municipal problems of the water and fire departments.

His wife, Mary Olive Wentworth, who died in 1950, had long been active in the diocesan work of the Protestant Episcopal Church of Massachusetts; she had also been president of the Massachusetts Parent-Teachers Association.

Mr. French is survived by two daughters, Mrs. Jerome C. Greene (Helen W. French) of Bronxville, N. Y., and Mrs. Sanford G. Gorton (Margaret V. French) of St. Lawrence, Jersey, Channel Islands; a grandson, Lucien H. Warner, Jr., of Milford, Conn.; and two great-granddaughters, the Misses Mary and Margaret Warner.

In her note accompanying the account, Mrs. Edmonstone wrote: "For many years I was Mr. French's secretary, know how much he was always interested in the

wonderful work done by Tech and how many young men he helped in a quiet way that they might have the advantages of Tech. Charlotte S. Edmonstone."

1891

The following messages were received by your Secretary: December 27, 1957, by wire, from H. B. Kane, Technology Alumni Association, Cambridge, Mass.: "Sorry to report that Harry Young passed away last evening." And, under date December 27: "It is with great sorrow that we report to you of the passing of Harry H. Young, Class of 1891 at M.I.T., at 6:30 P.M. yesterday. Mr. Young entered the hospital Tuesday and underwent surgery. Yours respectfully, T. M. Lowery, Mr. Young's Secretary, J. L. Hammett Company."

In the *Herald*, Boston's leading daily, under date of December 28 appeared this notice: "Funeral services for Harry H. Young, 88, of 192 Commonwealth Avenue, Back Bay, general manager and treasurer of the J. L. Hammett Company, manufacturers of school supplies, will be held at 2:00 P.M. Monday in Emmanuel Church."

"Mr. Young died Thursday night at Phillips House of Massachusetts General Hospital. He was a former president of the National School Service Institute and had been associated with educational groups throughout the East since he became manager of his company in 1895.

"Mr. Young was a graduate of Roxbury Latin School and of Massachusetts Institute of Technology in 1891. In 1925 he served as an American delegate to the International Chamber of Commerce convention in Brussels, Belgium. He was a member of the United States and Boston Chambers. He was also a fellow of the American Geographical Society and a member of the M.I.T. Alumni Council, Friends of the M.I.T. Library, the Algonquin Club, and The Country Club.

"Mr. Young leaves a daughter, Mrs. Arthur Holden of New York; two grandchildren, Richmond Y. Holden of Weston and Edwin Holden of New York; and five great-grandchildren."

Perhaps the word "sorry," used by the representatives of the two groups nearest Harry's heart — his business and M.I.T. (especially the Class of 1891) — speaks for us all who knew and loved him.

At the close of our annual meeting last June, Harry, Lin Damon, and I took a taxi from the Club. Lin dropped off at his Brookline home; Harry stopped at his house. He urged me to spend the night with him; I declined and went on to the North Station and my Littleton train.

The next day, June 9, Harry wrote me a long letter: "Dear Channing." He put down the names of all classmates who had been present at the meeting; also the guests, relatives of members present, and at the end he wrote: "I hope you didn't have to wait too long for your train. I should have insisted on your coming in with me. You could have stayed the night here. I have a spare room and bath, and a cook."

Always looking out for someone else! The host of those who knew and loved him — Frank Howard, Sylvan Stix, Walter

Hopton — everyone whom he could help.

Our future meetings will be different without Harry at the head of the table. But then: we have the memory; he was our President.

This note from Sylvan Stix: "Since I wrote to you some weeks ago, I have had a very sad loss in the passing of Mrs. Stix, and so I know you will excuse me if I seem to neglect you.

"In spite of the fact I have every reason to be grateful for the many years of happiness which we have shared, I find I must save myself in every possible way."

And lastly: we would lift our hats to Dr. Killian, our Top-President. A prosperous new year for him! He is plugging for us all. — WILLIAM CHANNING BROWN, Secretary, 15 Forest Avenue, Hastings-on-Hudson 6, N. Y.

1894

There was a saying current among the elder statesmen in my boyhood in New Hampshire that "A short horse is soon curried." The application at the moment is that with the Class now greatly depleted, notes of interest are necessarily few. Christmas cards have indicated that Abbot, Cray, Hunt, Nowell, Owen, Sherman, and Schiertz are still of good health and going on "about as usual." Abbot is still working on long-time weather prognostication successfully; Sherman, irreverently known as "The Junk Man of Akron" because of his large business in high-grade used machinery, writes that he spends every morning at his office, and then takes a nap in the afternoon. For 10 years he served on the Akron School Board, and his son Philip is now a member of the present Board. One of George's hobbies is family history, and he is especially interested in Portsmouth, R. I., where his forbear Philip Sherman was the local clerk in about 1660; the job is still held by one Arthur Sherman, who, we suspect, is some kind of a cousin. George reports that he has five great-grandchildren, mere grandchildren being even more numerous.

John P. Story, Jr., wrote from Washington that he is still "rocking along," and that his business, which I believe is real estate, takes his attention at 732 17th Street. He mentions two great-grandsons.

So far as the Secretary knows, George Owen leads with seven great-grandchildren, but Jack Nowell may have as many. George is well and maintains his broad interests: in sports, especially yachting; in music; and in Masonry. And Jack is living in busy retirement on his beautiful place in Hillsborough, Calif.

If there is any competition in the great-grandchild game, the Secretary will be glad to know of it and make due publication. He knows there are others, but lacks numerical data. Information, please. — S. C. PRESCOTT, Secretary, Room 16-317, M.I.T., Cambridge 39, Mass.

[Members of the Class of 1894 will be saddened to learn that, shortly after the above notes were received, Mrs. S. C. Prescott, wife of the Class Secretary, died in Cambridge on January 15. Mrs. Prescott was held in high esteem and was particularly well known to members of the Class through regular attendance at Class Reunions. — Ed.]

1895

As these notes are written, your Secretary is still in the Community Memorial Hospital, Ayer, Mass., after a hip operation last November.

In his will, Gerard Swope left \$100,000 to Bryn Mawr College for a student loan fund named in memory of his wife, Mary Hill Swope. He also left \$50,000 each to the American Friends Service Committee and to Columbia University for research in hardening of the arteries. In addition, he set up \$25,000 trust funds for each of his 12 grandchildren.

The remainder of his estate, estimated at several millions of dollars, he bequeathed to the Technion-Israel Institute of Technology in Haifa, Israel. An article in the *Philadelphia Inquirer*, December 4, 1957, reads, in part: "The bequest to the Israeli institute asked that it be used to enlarge a student loan fund he had previously established, and to set up fellowships to enable Technion students to pursue further studies at his own alma mater, Massachusetts Institute of Technology." Mr. Swope, who died of pneumonia on November 20, had retired from the presidency of the General Electric Company in 1944. — LUTHER K. YODER, Secretary, 69 Pleasant Street, Ayer, Mass.

1896

From New Orleans Charles Johnson writes that after his railroad work he was designing bridges and reinforced concrete culverts for the State Highway Department from 1939 until 1954. On June 30 he was 82 years old, and a new civil service law providing for compulsory retirement at the age of 70 went into effect; so he retired, and since has been interested in the geography of the United States and Society of Modern Poetry. Geography was one of the subjects our Class had to pass in the entrance examination and freshmen from the East were instructed by Chicago classmates.

From Cincinnati, at long last, word comes from Moritz Sax. He writes: "I remained in New England until 1901, when I returned to Cincinnati; and after working as a draftsman for about three years, I opened an office and practiced architecture until the depression. From about 1935 I did nothing in the office for several years, though my wife said I was the most graceful loafer she had ever seen. In October, 1941, I had a chance to do what turned out to be real war work. I went into the engineering department of Plant Number 2 of the William Powell Co. — a high pressure valve plant. At my age I did not expect to be there after the war closed, but I am still there. I was laid up for a few weeks last spring, and just got hold of this postal." This is the last answer on hand from the request sent to all members.

Dr. John, as he is affectionately known at the Alumni Office, telephoned that he was holding his own and his greatest difficulty was locomotion. He said he enjoyed the notes and suggested that if the rest of the Class wanted them to continue they must send in information about themselves and of any person, or happening, concerning the Class. He does not

see many people except those who were with him in his medical unit during the war; Hyde has been in to see him recently.

Peter M. Ward, Esquire, of 15 Broad Street, New York, sent word of Freedman's death. "Your letter (to Freedman) has been given me for reply, since on last December 1 Mr. Freedman died. Death came as the result of a stroke and was almost instantaneous, so he didn't suffer at all. . . . I was Mr. Freedman's lawyer and I am the executor named in his will."

Joseph E. Owens took the Mechanic Arts Course in '93-'95; he died January 2, leaving a daughter, Helen. Owens was a pioneer in teaching manual training in public grammar schools. Professor Runkle, as a member of the Brookline School Committee, included manual training in a summer school for several years and about '96 had it made a part of the regular grammar school course in a new Lincoln school built to accommodate the novel plan. He selected Owens to teach the new subject, which was eminently successful and has been adopted throughout this country. — JAMES M. DRISCOLL, *Secretary*, 129 Walnut Street, Brookline, Mass. HENRY R. HEDGE, *Assistant Secretary*, 105 Rockwood Street, Brookline, Mass.

1897

Those members of the Class who have not visited the Institute within recent years probably do not fully realize what a different place it is from the one we attended on Boylston Street. For instance, the list of principal events for the current season includes, in the halls of M.I.T., a concert by the Boston Symphony Orchestra, three concerts of chamber music, a piano recital, three concerts by the Choral Society, and a Glee Club Concert in which the Vassar Glee Club also participates. In addition there are listed four organ recitals in the Kresge Auditorium and seven in the M.I.T. Chapel. What a real feast for music lovers right on campus, not to mention other activities of interest.

At a recent meeting of the Alumni Council the following statistics were enumerated by Mr. Stoddard, Plant Manager; the statistics may well carry to those living at a distance from Boston a definite impression of the magnitude of the present operations at M.I.T.

"The budget for normal plant operations and repairs for last year amounted to nearly \$2,500,000, requiring a payroll of 325 men and women who comprise the plant department, including matrons, janitors, mailmen, painters, electricians, and the like. In addition to a vigorous educational program involving classrooms, laboratories, and a myriad of research activities, there are also many public service activities conducted on the lot during the evening. There are about 20 class sessions per week conducted by Lowell Institute. There are over 100 evening class sessions per week involving 5,000 to 6,000 students under the University Extension Classes of the Commonwealth — classes ranging from candid photography to electronic computers and pulse circuitry.

"In addition, there are meetings of many professional societies and of several military reserve organizations and other

public interest groups. The Lowell Institute, the University Extension Classes, and these other public interest groups account for an average of about 30 meetings an evening in the main educational plant.

"The night cleaning force of nearly 100 persons has to do the bulk of its work from 11:00 P.M. to 7:00 A.M. because of the difficulty of finding any earlier free time for much of the Institute's 80 acres of buildings. Cleaning supplies and equipment amount to \$40,000 a year and include four to five carloads of paper towels and 2,500 gallons of cleaning soap.

"The M.I.T. telephone system is larger than that of the average community in the Commonwealth. It is the largest private telephone system in New England, with a budget of over \$200,000 this year.

"The activity in the Auditorium has far exceeded anyone's expectations. Last year 1,225 events took place in the Main Auditorium, Little Theater, and Rehearsal Rooms. In the Chapel another 1,180 events took place. Thus, last year an average of 46 events taking place each week of the year, winter and summer.

"The total mail handled at the Institute probably exceeds the equivalent of a city of 25,000 — cities perhaps the size of Belmont, Melrose, or Gloucester."

Your Secretary has received just one communication during the month from a member of the Class. We quote a portion of a letter from George Wadleigh: "From Chick Kane I learn that '97 contributors are at the top in percentage of class contributing to the Alumni Fund but, as expected, have fallen a bit in contributions per member. I have to get out another appeal. Have you any suggestions as to theme of such? I have used *Alice in Wonderland* and one or two other classics. What about the 'Wonderful One-Hoss Shay'?" — JOHN P. ILSLEY, *Secretary*, 26 Columbine Road, Milton 87, Mass.

1898

President Edgerly, meticulously clearing up his files last fall preparatory to a trip to the South Seas of the Pacific, sent us a letter written to him by one of our classmates. While addressed to him and containing much that is personal, it also contains interesting glimpses for all of us concerning the activities of two of our classmates and their wives. May we venture to suggest that it is almost a model letter for class notes. Cutting out the more strictly personal paragraphs, we quote from this letter, written by Howard Bodwell:

"Thanks for your nice letter. I am very glad that you have come through successfully with recovery from your physical difficulty. It is true that we old guys may expect some moth-eaten spots to show up. I have about fully recovered from an attack of shingles which hit me back in January. Henrietta and I have just returned from a sojourn in San Jacinto. This is a small town three miles from Hemet and about 96 miles north of here. It was a good resting place for Henrietta from the task of cooking and keeping up a place like this.

"You will be interested to learn that we visited Fred C. Gilbert and his wife and had a very good time with them. As

you know he lives in Hemet, has been there some five years. He retired, he said, when he was 75, but has been keeping busy. They had recently completed and moved into a brand new and very nice house. He said that he had suffered a period of several years of arthritis or some such trouble but has fully recovered due, he declares, to the fine atmospheric conditions in Hemet. This may be true and I believe it is. He looks to be in fine condition now, as does his wife.

"He was much interested in talking over old times at Tech. Said he knew you very well; and in fact, I think he said he was born in Boston, as were you. He has been doing some dealing in real estate to some advantage, I think. He is also affiliated with a small company which manufactures precision parts for use in airplane construction. They have, the company, about \$90,000 of orders on the books now. I don't know where the plant is. He said the work they do may be, possibly, something similar to George Cottle's business, only on a smaller scale. Henrietta joins me in very best wishes. Sincerely, Bod."

We are writing these notes on January 13, thus shortly after the close of the holiday season. We wish to thank those classmates who sent us Seasons' Greeting cards and messages.

You will be interested in one card, somewhat out of the ordinary, which came from our classmate, Gorham P. Stevens, Course IV, and for many years director of the School for Classical Studies at Athens, Greece. The card is the size and texture of a stout souvenir post card, on which are various intricate black-and-white pen sketches. At first glance, the non-architectural observer notices the sketches of two lovely capitals, crowned with spiral volutes — the correct word is of the Ionic order — and beautifully ornamented; and then, over the rest of the card, various sketches, which are described by the words: DETAILS ERECHTHEUM EAST PORTICO. Completing the description of the card: on one end is printed A MERRY CHRISTMAS; and on the other end, A HAPPY NEW YEAR; and to complete the greetings, beside the title, DETAILS . . . , as above given, the name of the sender, FROM GORHAM P. STEVENS.

Now you understand, Gorham is a master in this field. He has published or caused to be published many books and sketches, which show models and restorations of celebrated temples and buildings of the golden age of Athens and of other historical spots in Greece.

The Erechtheum, like its more celebrated neighbor, the Parthenon, is located on the Acropolis at Athens. It is smaller than the Parthenon; and whereas the Parthenon is a temple of the Doric order, the Erechtheum is Ionic in style. (Now hurry to your encyclopedias.) The Erechtheum was completed about 400 B.C. We quote from a competent critic: "The graceful proportions of the temple and the great beauty of its ornamentation justly mark the Erechtheum as a jewel of Attic architecture."

The Erechtheum has passed through many centuries of vicissitudes. There occurred in 1827 a specially severe calamity, when, during the siege of Athens by the

Turks, a shell fell on the roof, causing great destruction. If you now visit the Erechtheum and take pictures of it or purchase them, you will note the damaged condition of the capitals of the columns, — not a trace of the Ionic order left. Gorcham's card is a restoration; and is a beautiful and fascinating work of art.

And now a few words as to the 60th. President Ederly expects to be back from his trip to the Pacific about April 1. George Cottle is flying on February 9 for a winter vacation of two months — a month in the Hawaiian Islands and a month in California — and will also be back in Boston the early part of April. There will then be two months prior to Alumni Day, June 16, 1958, to arrange for the 60th. We have received during the holiday season advices from four more classmates that they are planning to attend the 60th; these four additional to those already mentioned in the November '57 class notes. Furthermore, there have been four suggestions for the diversification of the reunion. — EDWARD S. CHAPIN, *Secretary*, The Eliot, 370 Commonwealth Avenue, Boston 15, Mass.

1899

It is with a deep sense of personal loss that I record the death on December 23 of Miles Standish Richmond, our Assistant Class Secretary. He has long been active in class affairs. It was only last September at the Secretaries' Conference at Tech that he and I were roommates in Baker House. He was a fine friend and we all shall miss him greatly. A more detailed notice will appear in the following issue.

Carroll Brown has finally decided to retire. He has left his Hagerstown, Md., address to return to his old home at Rye Beach, N. H. His new address is P. O. Box 202 in that ocean-side community. But retirement apparently is in name only: he left his specialty of school architecture in Maryland only to get involved as inspector on a new co-operative district high school being built in nearby Hampton, N. H. So he will be busy enough to keep out of mischief! It really takes courage to tear up your roots where you have lived a long time and transplant, even to a familiar location. At any event, Carroll will be close to Cambridge and is looking forward to attending our 60th reunion.

A Christmas card from Norman P. Rood shows him standing at a busy intersection in Mexico City with several modern skyscrapers for a backdrop. A sharp contrast, this, with the somewhat sleepy city which I visited in 1906 while Diaz was president! Norman looks hale and hearty in the picture. His address is given as: Montes Carpatos 515, Lomas de Chapultepec, Mexico City 10, D. F. Mexico. "Feliz Año 1958" to you too, Norman! — BURT R. RICKARDS, *Secretary*, 349 West Emerson Street, Melrose 76, Mass.

1901

When you read these notes you will have received the annual Class Letter. The news this month will be taken from the reply cards received in connection with the 1959 reunion.

Waldo Wildes, I, Rochester, N. Y.: "I

am still capable of locomotion unaided. I had a call some time ago from my old friend Richard Dow of Buffalo. We were both from Melrose, Mass., when in Tech." Roger Wight, XIII, Harwichport, Mass.: "Could not attend our 55th. So do hope to be present in 1959. However, have just returned home after almost 11 weeks and three major operations at a hospital; and although the doctors say I should be O.K. in 1959 and although I now feel reasonably well, can't say yes right away." Fred Claflin, I, Johnstown, Pa.: "Am too far along the Western slope of life to come to the reunion in 1959, and am too busy to take the time off."

Charles Flint, VI, Rochester, N. Y.: "With time marching on, the plan seems to me to be a good one. Unfortunately, I cannot get away from home in the month of June of any year. Greetings to all of 1901." Russell Glover, III, Harrington, Me.: "Fairly husky myself but my wife is more or less of an invalid and unable to travel." Ethel Gleason, IX, Kissimmee, Fla.: "My best wishes to those who will attend the reunion and also to those who cannot."

Allen Griffin, V, Santa Clara, Calif.: "I have not been East for many years and hardly expect to get back, but I like to keep the contact." Angus MacInnes, I, Port Washington, N. Y.: "Still going strong but unable to take any trips." William Newlin, II, Amherst, Mass.: "Professor Newlin is not able to attend and has been a complete invalid for nearly two years." Leonard Wood, I, White Plains, N. Y.: "88 years in 1959 and too many infirmities preclude. Heartiest congratulations to those physically able to be there." — THEODORE H. TAFT, *Secretary*, Box 124, Jaffrey, N. H. WILLARD W. Dow, *Assistant Secretary*, 78 Elm Street, Cohasset, Mass.

1902

Through a letter to the Alumni Office from his daughter it is learned that Maurice Goldenberg, Course IV, died on June 11, 1957. He had long been connected with the Truscon Steel Co. and at the time of his retirement was district sales manager with his office in Detroit, where he had made his home.

Wilson P. Harris, Course VII, from whom no news was received for many years, died on December 18, 1957. He made his home in Scottsburg, Va., where he was engaged in the nursery business. His son, Carl W. Harris '29, resides in Hingham, Mass.

Hercules Wallace Geromanos, Course V, died of double pneumonia on December 16, 1957. He was born in Zanesville, Ohio, but entered M.I.T. from the Springfield, Mass., High School. After graduation from the Institute, he spent a year or two in industry and then took up teaching chemistry and physics in suburban high schools. He later became dean of the Polytechnical School of the Boston Y.M.C.A. Co-operative Engineering School, but when the first world war came along he entered the Quartermaster Corps and attained the rank of major. After the war was over, in 1920-1921, he with his wife and daughter traveled around the world for a year and a half visiting Eu-

rope, Western Asia, Egypt, Ceylon, India, Java, Japan, Australia, and New Zealand.

A few years later he incorporated the Eastern Science Supply Co., which sold astronomical supplies to colleges all over the world. He had resided in Malden, Roslindale, Brighton, and since 1926 in Brookline. He enjoyed sailing and had been a member of the Boston Yacht Club with a boat in Marblehead Harbor. He was a member of the Masonic fraternity. He is survived by his wife, the former Lillian Alice Bradley, Smith '03, whom he married in 1906; and their daughter, Mrs. Helen G. Curtis of Fairfield, Conn.

By a letter received by Don Severance from a friend in Chicago it is learned that John M. Fitzgerald has passed on. More information will be sought as to the exact date of his death, which was before December, 1957. It is regrettable that the class secretary or the Institute is not informed of the death of a member of the Class by the family: often it is six months or a year before the information is received, and then indirectly. — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

1903

Set your sights on June 16, 1958, Alumni Day, our 55th! Fred B. Crosby is enjoying visits from friends at his beautiful home in Redondo Beach, Calif. Mrs. Crosby was seriously ill last spring, but at last accounts was in much better health. G. Huntington Clapp is keeping active in survey work in San Pedro, Calif. Clarence Joyce is busy in community affairs in Kearny, N. J., and is already making plans for a trip abroad next summer. William E. Mitchell makes Atlanta, Ga., his home but travels about extensively keeping in touch with Power interests.

Everett Howard King, V, died November 20, 1957, aged 74 years. He had always lived in Tewksbury, Mass., and devoted much of his life in service to the community. Selectman for six years, on the School Committee and Finance Board for 14 years, he also served on other town committees and in various town offices. A daughter and son comprised his family in addition to his wife, who survives him. Crippled by the loss of a leg, his last few years were spent in a wheel chair; but his courage remained with him to the end. Our sympathy is extended to Mrs. King in her bereavement.

Tom Sears is to be commended for the excellent presentation of the Alumni Fund objectives in his recent Class Letter. It should stimulate our members to try to improve the position of the Class in its share of effort. — F. A. EUSTIS, *Treasurer*, 131 State Street, Boston 9, Mass. LEROY B. GOULD, *Secretary*, 36 Oxford Road, Newton Centre 59, Mass.

1904

Last month we had no items to report and this time only a few. We will leave it to you how to figure the percentage increase. The various devotees of Florida sunshine among our classmates have probably drifted south by now (January 12), but the radio reports of Florida weather this year don't sound too enticing.

Our classmate Katherine Dexter McCormick was recently discovered looking fit and vigorous as she took a constitutional along the Boston shore of the Charles River. In response to a question as to why she was here instead of Santa Barbara, she said that Boston had been so delightful this winter she couldn't leave it. Unfortunately, a big snow storm and cold wind followed the next day; but up to then her statement was quite true.

Christmas cards were received from various classmates and greatly appreciated by us both, but why didn't a larger percentage of you include a note about yourselves?

Ralph Hayden reports from California some colder than usual weather, but no serious damage. Roses, cyclamens, and Fuchsias are in full bloom. Also grass grows to give him exercise in cutting. The following is quoted from Ralph's card:

"Always interested in the '04 class news. I can't add much to it, except that I keep well, but always aware that our classmates seem to be dropping off. Of course, 53 years out of school and we are all getting older. I was glad to hear favorable news of Currier Lang, especially so as there are very few of our high school class who went to M.I.T. left. As you gaze across the Charles, can you picture all the area occupied by the beautiful Technology buildings, under water at high tide, and just a mud flat at low tide? I do, mentally, as that was the condition of things when I, as a youngster, saw it, before the Harvard Bridge was built, or the dam."

The Bob Phinneys report themselves back from India and Ceylon. They were gone seven months and had a wonderful time. Bob, Jr., is now a senior at M.I.T. and a second son, Stephen, is hoping to enter this fall. Frank Davis can still draw a bead on game at his northern Michigan ranch. He reports grouse hunting in October and deer hunting in November. We assume he bagged some, but he didn't say.

The Currier Langs are about ready to take off for their trip to various points in the West Indies by air. By the time you read these notes, they may be back in Norwalk.

After these notes had been completed and delivered to the Review Office, we were shocked to learn of the death of Gus Munster. The following obituary notice appeared in the *Boston Herald* on January 15: "August W. Munster, 75, of 12 Canterbury Road, Winchester, retired vice-president of the Boston and Maine Railroad, died yesterday at home.

"When he retired in 1950, he was in charge of purchases and stores for the B. and M., Maine Central Railroad, and Portland Terminal Co. He was graduated from Massachusetts Institute of Technology in 1904. He was born in Waltham and entered railroad service in 1904 as an apprentice machinist on the Northern Pacific Railroad. In 1909 he transferred to the New Haven Railroad as materials inspector and later as material engineer of tests. He went to the B. and M. in 1912 as general storekeeper and was made purchasing agent in 1917.

"He leaves his wife; a brother, Albert, of Waltham; and two sisters, Miss Bertha Munster of Waltham and Mrs. Rose Atwood of Bolton. Funeral services will be

held at Bennett Funeral Chapel, 1 Elmwood Avenue, Winchester, Thursday (January 16) at 2:00 P.M."

Gus was one of the Boston stalwarts who regularly attended the class reunions and had many friends in the Class. In the days when reunions were more frequent than they have been recently, he was always the life of the party. It is hard to lose such loyal classmates as Gus, and the Boston contingent in particular are going to miss him sadly.

Well, that's about it for now. If you ever have a desire to see your name in print, just send us some news about yourself and we'll do the rest. — EUGENE H. RUSSELL, JR., *Treasurer*, 82 Devonshire Street, Boston 9, Mass. CARLE R. HAYWARD, *President and Acting Secretary*, Room 35-304, M.I.T., Cambridge 39, Mass.

1905

Part of the remuneration for the class secretary lies in the receipt of Christmas greetings from class members. This year I received cards from the John Ayers, the Bill Balls, the Jim Barlows, the Ed Barriers, the Merrill Bartletts, the Erwin Benders, the Bobby Burnses, the Bert Fileses, the Andy Fishers, the Gene Kriegsmans, the Roy Lovejoys, the Grove Marcys, the Bob McLeans, the Fred Pooles, the Al Prescotts, the Willard Simpsons, the Henry Stevensons, the Frank Websters, the Roy Walkers, and the Gib Towers; also Henry Buff, Sid Caine, Walter Eichler, George Fuller, Gil Joslin, John Meggison and Wallace Taylor. It was nice also to receive greetings from Mrs. Ros Davis and Mrs. Ray White.

Unfortunately (from the standpoint of filling up the class notes), little news was contained; but by inference I conclude that good average health and happiness is enjoyed by most. The Burnses, Fullers, and Gil Joslin are enjoying the good weather in Florida (such as it is). Mrs. Webster reports that Frank is still bed-ridden, condition about the same as for several years. The Ayers' card shows them in profile silhouette, proving that age has no effect. Gene Kriegsmans' contained a renewed invitation to visit them in Idaho, an invitation we hope to be able to accept sometime. Grove's card showed an etching — Grove's own handwork and very nicely done — of their farm and contained a colored photo of the "Four Foxy Grandpas" Kenway, Bill Spalding, Grove, and myself, taken during a visit at Bill's country place in Conway, N. H., last fall.

Roy Allen's Christmas letter tells of receiving a letter from Dick Senger to the effect that he (Dick) was still in the Latter-Day Saints Hospital, Salt Lake City, but that the doctors hoped to have him out sometime in February. This means about a year lying on his back. Must have been a very badly smashed leg.

John Meggison reports from Galena, Kansas: "You asked for some individual notes. The family attended the Christmas party for the employees and their friends, given by the Empire District Electric Co. Over 1,800 there. There was some entertainment, and a Christmas tree, with Santa Claus for the children. The main floor was given over to the children to play

for half an hour, and then a dance for all who wished. It was a good time to meet many employees whom we seldom see, because they are in different substations scattered over the district, and we get together twice a year.

"The trip through the states to New England was two months' service to various Bible classes, large and small. One was a large convention in Detroit, where some 400 gathered for four days of Bible lectures, fellowship, question meetings, testimony meetings, and song services. Then another at New Brunswick, N. J., for two days of similar study and fellowship. The latter convention was in the Rutgers University chapel, a beautiful stone structure, built in the early days of the country. An interesting custom of the classes is to level off one of the stones in the outer wall of the Church and inscribe the name and date of the class. There are many stones already inscribed, some covered by the growth of vines and ivy. These old campuses are very interesting, like the one at Harvard College and at Yale. We hope the M.I.T. campus will be thus revered in days to come. These are permanent, while the lesser high and grade schools are replaced as the cities need new ones. Cambridge and Oxford in England are similarly revered in the minds of all the country. Well, big changes are due to take place all over the world in the next few decades, and changes come fast now.

"The visits through New England are always very highly appreciated, as it was the region of my youth. This time I visited my sisters, scattered in Newburyport and Haverhill, Concord and Rochester in New Hampshire. It is still a beautiful country, though the beaches have been spoiled by commercializing. The Ozarks and the northern part of Missouri are very like New England, hilly with many streams of clear water, and some lakes. As Solomon states in Ecclesiastes 3:11: 'God hath made everything beautiful in its time; and He hath set the world in their heart (adapted man to the earth and the earth to man, so that when each is perfect, as it will be some day, there is complete satisfaction, and contentment) so that no man can find out the work that God maketh from the beginning to the end.' There are limitations and bounds to human capacity. The earth is to be man's eternal home, though the Church is called out from the rest of mankind for a special purpose, and to a different nature. 'The heavens, even the heavens, are the Lord's, but the earth hath He given to the children of men. (Psalm 115:16.)' The visits through Connecticut were very much enjoyed. Stayed with some architects who were busy building beautiful homes; and with musicians who played most entrancing music, some of the older hymns with variations which send a thrill through the mind and body by their beauty of melody and tone. Road building was manifest everywhere, and at great expense, and the changes in the cities — new business palaces, new magnificent hotels. Changes in transportation were noticeable — the railroads were having difficulty in continuing to operate; even the busses are cutting off service, because the trend is to individual car ownership. You and I have seen the electric street cars come into wide use and

then pass out of service till there are but very few left. The service trip ended with a general convention in Bloomington, Ind., at the State University, which comprised a whole week of lectures, fellowship, and study. Some 800 people enjoyed the meetings.

"After my return home there was much work to do, which had piled up for some time. We enlarged the arbor and paved it with brick, with a wide brick wall to the back door; a stone wall along the alley topped by brown rocks embedded in the cement; a natural rock flower box; a trash burner; and a compost box for rotting leaves and keeping a supply of good soil. This was combined with Sunday services in the tri-state district, and local conventions. So we have been really busy, enough to keep us healthy, and out of mischief, as well as adding beauty to the home; which the neighbors can enjoy as well as ourselves. So there is much joy to living if one looks around for it. The key note to happiness is service for others."

Roy Walker, in commenting on his new address (P.O. Department change only) added: "After 47 years and 3 months with Lanston Monotype Machine Co. of Philadelphia, I am enjoying retirement to the fullest. Our home is on the banks of Schinylhill River, where international boat races were held last year. There is boating, swimming, and fishing; but I prefer lazing along in my 18-foot homemade canoe with double paddles."

The only other items available at this time concern the death of Claude A. Anderson, XIII, (previously reported) on December 17 at All Saints Hospital, Chestnut Hill, Pa. Letters and clippings were received from Sid Caine and Frank Chesterman, also from Dan Patch'02, a very close friend and Andy's sponsor in getting him to matriculate at M.I.T. Also a letter from Andy's daughter and a letter Gib Tower received from Sid. Perhaps the best outline of Andy's life is in the letter from his daughter, Mrs. Willard G. Hatch of Auburndale, Mass.: "Claude A. Anderson, born January 17, 1881, York, Ontario, Canada. Parents: Melancthon O. Anderson and Caroline Blackman. Graduated from Humboldt High School, St. Paul, Minn. Attended University of Minnesota for two years. Worked for Newport News Shipbuilding Co., Fore River Shipbuilding — Sturdevant (in East Boston I think). Graduated from M.I.T. in 1905 in Naval Architecture and Marine Engineering. Married Mabel Cusack Ray in 1906 and had three children: Townsend C., Frances R., and Carolyn E.

"After several years in Cleveland, Ohio, moved family to Philadelphia, settling in Germantown from 1914 until death. Was district manager of Illuminating Electric Heating and Ventilating Co. for many years, then changed to Johnson Fan and Blower Co., and finally had own business of sales engineering for 20 years with office in Commercial Trust Building in Philadelphia. Was active in M.I.T. Club of Philadelphia and a former president. He was a deacon and former trustee of Second Baptist Church of Germantown, where he stood in vestibule of church every Sunday to greet friends and strangers. He belonged to the Society for Heating and Ventilating Engineers, but no

fraternal organizations. He had insatiable interest in people, places, buildings (especially churches), historical landmarks, and events of the world. His wife died May 13, 1957.

"He died December 17, 1957. Their daughter Carolyn died in 1938. Survivors: son, Townsend C., a military attaché in Cairo; daughter, Mrs. Willard G. Hatch (Frances); and three grandchildren, Theodore A., Alan T., and Verna Ray Hatch, all of Auburndale, Mass.; and a brother, Charles, of Tacoma, Wash." There are other interesting items in the letters above referred to which I will transmit in the next issue. — FRED W. GOLDTHWAIT, Secretary, 274 Franklin Street, Boston, Mass. GILBERT S. TOWER, Assistant Secretary, 35 North Main Street, Cohasset, Mass.

1906

If a member of the Massachusetts Legislature had had his way, you would be attending an Alumni Day on the Harvard Campus a few years hence! According to the *Boston Herald* of January 8, a bill he introduced would have had Harvard move to Lawrence and M.I.T. occupy the present Harvard campus, leaving the M.I.T. area along the Charles for industrial redevelopment. However, the proposal was quickly turned down by voice vote. How goofy can they get? Around the Hub — early in January — the landscape is beautiful after a nine-inch fall of wet snow, while parts of the south, even Florida, are shivering with temperatures in the 'teens and twenties. We hope the sun bathers took along their winter overcoats, and have been enjoying more normal weather since then. A few of the regulars are at Daytona, and Abe and Sadie Sherman were planning to leave for Sarasota December 27 as usual, to stay till April. In a note with their card Abe said: "Last June's banquet was the first one I have missed in a good many years. I look forward to next June, as I am good as ever now."

The hospitals have done a good job on some of our other classmates, too. Jim Banash enclosed a note with his card: "Hope all is well with you and yours and that we'll meet again in the not distant future. Am just out of the hospital and doing O.K. — the operation was a success and the patient LIVED." Perhaps you noticed in the "Twenty-five Years Ago" column in the January Review that Jim was president of the National Safety Council then. On the card from Harold and Agnes Coes, Harold wrote: "We did not attend the New York annual Alumni Dinner as I had to have an operation from which I am now completely recovered and back to normal." Incidentally, their card is a honey, and nostalgic, with an old-timer steam "engine" hauling a freight train over a structurally correct trestle, and a winter landscape below and beyond. The imprint on the back reads: "From the painting by Kent Day Coes," the Coes's son, an artist and illustrator. In a phone talk with President Kidder early in January, he said that Carroll Farwell had been laid up; so later I talked with Mrs. Farwell and Carroll at their home in Sharon, where a few days before Christmas he

had had the same kind of an attack as President Eisenhower — a relatively mild one from which he is making a normal recovery. Long before March he will probably be back in the office, as they do not plan to go to Florida this winter.

Now and then, however, the hospitals and medicos are frustrated, as I was grieved and shocked to learn from Herb Dean that within four months last spring and summer he had lost both his wife and his daughter. In his letter last December he wrote: "When Mrs. Dean accompanied me to the 50th reunion I knew that she could not long survive, as an earlier operation had disclosed cancer. She carried on until October '56 and helped care for our daughter, who had been a multiple sclerosis patient for 16 years. After three operations my wife passed away in August, four months after daughter's death; and two days before her death our son fulfilled his mother's wish that she could see him married. My family moved from Philly to Connecticut 14 years ago, seeking special medical care for our daughter. I continued in employment in Philadelphia [a V.P. of the Bell Telephone Co. of Pennsylvania, with which Herb has been associated since 1906] and commuted week ends to Connecticut. While I am re-assembling my life I shall continue working in Philadelphia for a year or so, and ultimately retire to Conn." Another example of the courage, faith, and devotion that helps to carry one through such devastating trials. Our deepest sympathy goes out to Herbert and his son.

However, many of the cards brought cheery messages as well as interesting news. Bill Cady sent "Greetings from the Pacific Coast to the Atlantic Coast," and told about attending, with his wife Nelle, a dinner meeting of the Oregon Tech Club, with the Cushmans and Mearses also present. Pictures were shown of the building of the Compton Laboratories and some experiments there. Later on the Cadys spent an evening with the Cushmans, when Bob showed moving pictures he had taken around Cape Cod, Plymouth, and a nearby town where he was born (that would be Kingston, March 10, 1884, Bill). Jim Wick reported that daughter Emily — the Rockport sailor — had gone back to Tech, this time as research assistant in the Food Technology Lab.: "And we share her happiness in being in the stimulating climate of M.I.T." Tom Hinckley allowed: "This year's card may not be 'mouth-watering.' It is on the White Mountain trail that we like to travel on snow shoes." But either Tom or Georgiana got the prints crossed up; for lo and behold, ours was a color photo of a smiling couple taken on the campus, and that's all right with me. The card from Alice and Leavitt Bent didn't need any message; a winter photo of their beautiful place, Wintersell, in Oxford, Md. Leavitt retired five or six years ago after many years with Hercules Powder Co., and I would judge he can find plenty to do around the place to keep him busy. Stod Pulman hopes to get over this way — he was president of Babson Statistical when he lived in Wellesley — and Lydia and Jim Orme hope to do likewise, "maybe at the 55th or before."

Frances Fuller thought we "might be

interested in the enclosed. Floid and I drove over to New York in quite a storm to attend the banquet and were the only representatives of '06. A special gold 50-year membership button was presented to each one." The enclosure was indeed interesting — part of the program for the December 4 annual meeting of the American Society of Mechanical Engineers which included "Recognition of Fifty Year Members," three of the 27 recipients of the gold buttons being '06 men, Harold Coes, Herbert S. Philbrick, and Floid. Several awards had been made at the luncheons preceding the banquet, one of them, the Henry Laurence Gantt Gold Medal, being given to Harold Smiddy '20, VI, S.B.

From Terrell Bartlett came a long letter with much appreciated enclosures. Most of the letter and a clipping from the *Dallas News* of December 18, 1957, concerned Charles Saville, who graduated with us in Course XI although he had entered with '05 and, Terrell says, lost a year because of a long and serious illness. He died in 1930 just a few days after T. had visited him in the hospital, and although his career may have been included in class notes at the time, it may not be out of place to give some of the facts here. Charles's home had been Waban, so for six years he was sanitary engineer with the Massachusetts Department of Public Health, then spent a year and a half in England, France, Germany, and Switzerland, part of that time as a personal assistant to that pioneer in sanitation, Dr. Karl Imhoff. The next few years he was with Hering and Gregory in New York, during which time he met Edith Clara Everman of Dallas, whom he married in 1915 (they spent part of their honeymoon with the Bartletts), being then director of sanitation in Dallas. For a few months prior to that, he had returned to M.I.T. as a student in the Course VII School for Health Officers, and later became director of Civic and Industrial Development for the Dallas Chamber of Commerce, then its general manager. The clipping, sent to T. by Mrs. Saville, concerns the Dallas Tuberculosis Association, which, the article relates, "came into being because Charles Saville recognized the need for voluntary effort to combat t.b. and called a group to meet on November 2, 1916." Out of their discussion came the Dallas Society for the Study and Prevention of Tuberculosis, soon affiliating with the National Association and using the Christmas Seal to raise funds which, for a number of years, helped to maintain a children's health camp at a nearby lake. As Terrell remarks, Charles Saville's interest in, and contribution to, the public health and welfare is another example of a man's good works nor being "interred with his bones."

Among the special Tech Christmas cards your Secretary and Marion sent were several to recent widows, and Mrs. Harry Brown replied with a very interesting letter about her European trip last summer and fall, spending four months with a sister who teaches in an American school in Mannheim, Germany. Besides Germany — she enclosed a colored post card "In den Berchtesgadener Alpen," with the rock-covered roof of a cottage in

the foreground and the majestic Alps in the distance — she did Switzerland three times, crossed from Ostend on an excursion into England, and did seven cities through Italy to Naples, where she embarked for New York on the *Constitution*. If anybody wants advice and information on how to do Europe on a shoestring, Pearle Brown may be able to help!

And that reminds me, when I saw our Veep and Class Agent at the January Alumni Council meeting, Sherm told me that he and Bertha would be leaving in April for Europe and not returning until July, partly, I gathered, to attend conventions, conferences, and such; so one of our regulars will be missing June 16. Perhaps you will be on deck Alumni Day this year. — EDWARD B. ROWE, *Secretary*, 11 Cushing Road, Wellesley Hills 81, Mass.

1907

During last December I had the very real pleasure of receiving two letters from Mrs. Alexander (Alfrieda T.) Macomber, the widow of our former class president and nationally known M.I.T. Alumnus, and of writing to her on two different days. She has moved from Boston to 2 Fifth Avenue, New York 11, N. Y., "into an attractive but small apartment, just for a complete change . . . to take me away from memories and place me near planes and ships to travel." I have sent to her copies of our up-to-date list of class members, record of deaths of '07 men, and reprint of the '07 class notes in the November Review, these being papers like those sent to all '07 men last November.

Also last December I received a letter from Fred Moses, enclosing a clipping from the December 6 issue of the newspaper published at the Otis Air Force Base, Massachusetts, showing a picture of Fred in a T-33 jet, with the following legend: "Mr. Frederick Moses, Chairman of the Board of Firemen's Mutual Insurance Company of Providence, is shown after a jet orientation ride given him in a T-33 jet trainer, Monday, December 2, at Otis A.F.B., Mass. His pilot is Captain Paul Bates, a member of the 60th Fighter Interceptor Squadron. Mr. Moses, an avid pilot himself and owner of a Cessna 182, resides at Warren, R. I., with his wife. He is also a member of the Board at the Industrial National Bank at Providence."

A Christmas greeting card received from Wheaton Griffin contained the good news that he was feeling stronger all the time and that he and his wife hoped to go to Daytona Beach during the past winter. In accordance with their usual custom, Frank MacGregor and his wife spent the winter at Tryon, N. C. His mailing address until mid-April is P. O. Box 1522 in that city. Emory Hukill has moved from Cleveland Heights to 13720 Shaker Boulevard, Cleveland 20, Ohio. BRYANT NICHOLS, *President and Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary and Treasurer*, 18 Summit Street, Whitinsville.

1908

Our second dinner meeting of the 1957-1958 season was held at the M.I.T. Faculty Club, Cambridge, Mass., on Wed-

nesday, January 8, '58, at 6:00 P.M. Boston and its suburbs were digging out from a fairly heavy fall of wet snow on the day before, so transportation was not easy. However, we had a fair turnout with Bunny Ames, Bill Booth, Nick Carter, Fred Cole, Henry and Mrs. Sewell, and Joe and Mrs. Wattles braving the ice and snow. Henry and the writer had arrived a little early; so in the quiet of the Cocktail Lounge, we were able to compare notes on the good progress of '08's 50 Year Gift to the Institute, receiving helpful suggestions from Mrs. Sewell. In the meantime, Bunny Ames, Fred Cole, and Bill Booth had arrived at our table — with Bill thoughtfully carrying an extra cocktail for Sam Hatch. Had to tell Bill that Sam was spending the winter in Cincinnati with his son, so it was a double-header for Bill.

About 6:30 P.M. we went to our private dining room, the Wattles arriving soon after. Mine Host Morrison had provided the usual excellent dinner, and we all ate more than was probably good for us. Joe had brought some of his kodachromes; but considering driving conditions, it was decided to forego that pleasure and adjourn fairly early.

Another '08 man has forsaken Massachusetts, as Abbot Thompson now lives in West Franklin, N. H. We are sorry to report the death of Jacob Fottler at his home in Mazon, Ill., on August 16, 1957, and also that of Sydney James at his home in Chicago, Ill., on November 14, 1957.

This is the BIG YEAR for '08, as we celebrate our 50th in June. Reunion will be held at Snow Inn, Harwichport, Mass., on the Cape, June 13 to 15. Make your plans to be with us — remember that ladies are invited. On June 16 Alumni Day will be held at Cambridge. During the banquet, we present our '08 50 Year Gift to the Institute. Have you subscribed to this year's Alumni Fund? Your gift helps to build up our Class 50 Year Gift to M.I.T., so please be generous. Your 50 Year Gift Committee has been busy and reports some substantial gifts from classmates; but it's up to everyone to help. Even though you may have made a token subscription to the Alumni Fund last fall, see if you can't make a second gift in 1958. Remember that M.I.T. did a good job in preparing you for your life work; so show your appreciation by subscribing to the Alumni Fund, your way of saying "Thank you." H.A.S.N.? — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass. LESLIE B. ELLIS, *Treasurer and Reunion Chairman*, 230 Melrose Street, Melrose 76, Mass.

1909

We regret that we were unable to insert any notes in the last two numbers of *The Review*; but no material was received, as much as we tried to obtain some. Unfortunately, in this number there are several obituaries to report.

Many of us were more than shocked to learn that in December our president, Jim Critchett, was seriously ill in the Deaconess Hospital in Boston. Several of us visited him and found him quite cheerful and philosophical. News came of his death on December 18. Services were held in

Orleans, Mass. on Friday, December 20. We were fortunate in that Art, I, and Betty Shaw were able to attend and represent the Class. We have written to Mrs. Critchett expressing the sympathy of the Class as well as our own. Acting on her suggestion that contributions be made to the American Cancer Society in lieu of flowers, we have sent \$10 in behalf of the Class. Jim prepared for the Institute at the Watertown, Mass., High School and took Course VIII, Physics, with emphasis on electrometallurgy. As we all know, he held many important offices, such as class clerk, member of the Institute Committee, treasurer of *Technique*, Class Day Committee member; and in our senior year he was our class president. He played guard on our freshman and sophomore football teams, and your Secretary can attest to his prowess.

Shortly after graduating from the Institute, Jim joined the Union Carbide Company, first being located at Niagara Falls and then New York City. He rose rapidly, ultimately becoming vice-president. During World War II, he was a consultant to the government on metals and their procurement and was also a consultant on the development of the A-bomb. He retired in 1947, a few years before the official retirement age, so that he and Mrs. Critchett could "do some of the things that we always wanted to do." They purchased a home on the Cape at Orleans, Mass. However, Jim was not permitted to retire completely; for during the Korean War he was back with the government on part time at least, again as a consultant on metals, and ever since had continued to go to Washington as a consultant. After the death of Carl Gram in December, 1952, we elected Jim as our class president. You all have received the class letters which Jim sent out at intervals; and in the fall of 1955 and 1957 he, with your Secretary, represented the Class at the Alumni and Class Officers' meeting at the Institute. His impressions of these meetings have appeared in the class notes, the last being in the December, 1957, Review. In 1910 Jim married Ruth Taylor Walton in Newtonville, Mass., who survives. Two daughters, Mrs. Russell Boyer and Mrs. Doris Rainey, both of Orleans, and five grandchildren also survive. In spite of his high attainments, Jim was always his unassuming, quiet self, beloved by all who knew him. We of the Class shall surely miss him.

We are fortunate in having Molly, XI, as vice-president, who, in accordance with the constitution, will assume the duties of president. As soon as it can be arranged, an election will be held to fill Jim's place, as well as the offices of vice-president and secretary.

A Christmas card sent by John F. Davis, II, to Herb Stiebel, III, wishing him the season's greetings and reminding him of our approaching 50th reunion brought the sad news that Herb had passed on. Mrs. Vera Hopewell, Herb's sister, enclosed the following clipping from the *Glendale, Calif., News Press* of December 9, 1957: "Funeral services for Herbert J. Stiebel, 70, of Surfside, formerly safety engineer for the Travelers Insurance Company in Los Angeles, will be conducted at 2:00 P.M. tomorrow in

the Little Church of the Flowers, Forest Lawn Memorial Park, under direction of Forest Lawn Mortuary. Mr. Stiebel died Saturday. Since his retirement five years ago, he had been active in civic affairs in the Surfside area. He leaves his widow, Ethel; a daughter, Mrs. Ruth E. Daly; a sister, Mrs. Vera Hopewell; and one grandchild."

Mrs. Hopewell's letter told that the clipping neglected to mention Herb's World War I service and added: "He enjoyed being retired from business as much as any man I ever heard of. He had an extensive trip to Mexico, to Honolulu, to the Canadian Northwest, and to Europe, where he spent three months. He was a very active member of the Surfside committee and did much to make Surfside a better place in which to live. He knew everyone in the colony and everyone seemed to be his friend. He wanted to return to M.I.T. for his 50th reunion and had plans all made for a new car, and so forth, but it was not to be. He put up a valiant fight against cancer but it proved too much for him." While at Tech, Herb was a member of his class relay team, the Tech Show chorus, and of the Mandolin Club, being its very popular leader in his senior year. '09 will miss Herb's buoyant greeting at its 50th.

The Alumni Office received quite belatedly notice that Henrietta Locke Esselen, V, had died in March, 1956. She was married to Gustavus J. Esselen, a prominent consulting chemist who had offices in Boston. They lived in Swampscott, Mass., for many years. He died some three or four years ago. Our records show that a daughter, Rosamond, married Bradford K. Bachrach in 1939.

The Alumni Office also sent us a notice that Allen Shippee, X, died in November, 1957. Our records show that for most of his life he had been associated with public utilities such as the Baton Rouge Electric Company; the Adirondack Electric Power Corporation, Oneida, N. Y.; the Twin State Service and Electric Company; and at the time of his death, the Central Vermont Public Service Corporation at Rutland, Vt. In September, 1911, he married Marguerite L. Foster.

We received from the Alumni Office a notice of the death on May 5, 1957, of Duane S. Slater, I, at Tyringham, Mass. The only record which we have states that his address was Tyringham, Mass., in 1926.

In a letter to the *Boston Globe* Florence Luscomb, IV, urges a disarmament agreement rather than greater satellites and stepped-up armaments, which she feels will lead to world annihilation.

George Wallis, II, our assistant secretary, sends the following: "Marcia and I had the pleasure of a few days' visit with Howard and Caroline Fisher at Whitefield, N. H., in October. With some neighbors from Rumford, R. I., they were touring New Hampshire during the height of the fall foliage. It was ideal weather for golf, and we enjoyed a few games together. For many years Howard has operated an engineering and construction company in Pawtucket, which he finally merged with another group so as to be free to travel, including a winter vacation in Florida.

"Glad to notice by the radio and the papers that you are back from Russia and active in this country again."

Lewis Nisbet, I, writes from St. Petersburg, Fla., as follows: "Charles Josiah has made the local headlines once more. I'm still a loafer and don't like it too much. Spent the summer in Maine with my daughter and six kids. What a life! May stay here next summer, but I doubt it. A Merry Christmas to you all, and a Happy New Year." Lewis refers to an enclosed clipping from the *St. Petersburg Times* which tells of Charlie Belden, "Redington Beach's cowboy photographer, laden with cameras," who with his wife had made an eight months' trip in which he photographed Norway, including the North Cape; Denmark; Sweden; Finland; Germany; Paris; Lucerne; and Vienna. The clipping showed a photograph of the mid-night sun. Charlie's car was put on 35 different ferry boats and steamboats and traveled 25,000 miles. Charlie states that in Norway "everyone speaks English because it is a compulsory subject in public schools and that more Norwegians live in America (5,000,000) than in Norway (4,000,000)." We have reported several others of Charlie's travels, including the recent dangerous one among the warring Arabs of North Africa. We all remember Charlie as the "glamor girl" of our Tech Shows. — CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: MAURICE R. SCHARFF, 250 East 43d Street, New York 17, N. Y. GEORGE E. WALLIS, 185 Main Street, Wenham, Mass.

1910

It is with regret that I have to announce the passing of Captain Lew M. Atkins of Annapolis, Md., and Guy Harcourt of Buffalo, N. Y. I only have the announcement of Captain Atkins' death last October, 1957. The *Buffalo Evening News* gives the following about Guy Harcourt: "Guy N. Harcourt, 68, of 127 Bedford Avenue, retired vice-president in charge of engineering of the Bufllovak Equipment Division of Blaw-Knox Co., died Wednesday (November 20, 1957) in Millard Fillmore Hospital. He had been ill two months. A native of Wappingers Falls, Mr. Harcourt received a master's degree in civil engineering from Massachusetts Institute of Technology in 1910. He switched to chemical engineering and served in the Army Chemical Warfare Service during World War I. After the war he worked for chemical companies and had his own business in St. Louis. In 1929 he joined the Buffalo Foundry and Machine Co. as manager of the New York office. He came to Buffalo in 1939 as vice-president in charge of engineering and director of Buffalo Foundry. The company was absorbed in 1945 by Blaw-Knox Co. and became the Bufllovak Equipment Division. He retired from Bufllovak in 1954 and went to England four years ago to survey the organization of a chemical equipment division. He returned to Buffalo a year ago."

Carl Lovejoy writes as follows from Briny Breezes, Delray Beach, Fla.: "Noticed you mentioned my retirement in a recent issue of the Tech Review. My

Rhode Island address is my permanent home. This is second winter here. Bought a trailer which stays put. We are right on the same beach and ocean the rich people have, but living on a scale commensurate with a retired government employee. Mostly retired people here. Have several close friends nearby, and my wife and I are enjoying an easy life."

V. T. Bien sends his Christmas Boxford Bulletin out annually. Boxford is his residence in Bethesda, Md. This year his bulletin consisted of excerpts from his diary written during the years of 1917-1918. The following are entries of January 21, 28, and 29: "21st: This was a 'heatless day' — first of 10 Mondays on which all industries, office buildings, and so forth, were to use no fuel the country over. Too cold for building and so I stayed home. Ordered coal. All I could get was a ton of soft coal. We also were plagued with a sugar shortage. We were permitted only a pound or so at a time, and that only at rare intervals. . . . 28th: Heavy snow storm — 8 to 10 inches — temperature 20 degrees. Started for the city; but in trying to get up a steep incline near our house, stripped the gears. I could not go forward or backward and had to abandon the car. 29th: Still very cold. Tried to get my car up the hill again with the Ford truck, and two men helping. Too much snow and ice. Had to abandon the attempt. The fire in the furnace expired. Decided to dispense with its services the rest of the year and to sell our soft coal. In town in the afternoon with the Ford truck and bought two airtight wood stoves. Anything would be better than that impossible soft coal. Set one up in the bedroom upstairs, and the other in the living room." How well I remember those days in January, 1918. I was in Washington at the time.

Also entries of August 12, 13, 21, describing an auto trip through the Berkshire Hills and the hills of New Hampshire: "12th: Broke camp about 9:15 after a good night. Followed along the eastern edge of New York State and crossed over into Massachusetts at Great Barrington, then north to Williamstown, which was superlatively beautiful. One has to visit New England to realize the beauty of its towns with their central common, white church spires, and quaint houses. 148 miles that day." The Mohawk Trail was, of course, very impressive, as I guess it still is. "We camped that night at Hinsdale, N. H. 13th: From Hinsdale, we went up through New Hampshire, passing through Newport, Sunapee, past Newfound Lake, to Plymouth, N. H. Roads were mostly sandy gravel, fair to good, though somewhat rough in places. The road often followed streams with rapids, falls, and dams. Numerous mills, mostly manufacturing paper from pulp wood; and most of the mills were driven by water power. What farms there were, were poor; and many were abandoned. We reached Plymouth, N. H., about 3:15 P.M. There I cleaned the car and myself. Put on my best bib and tucker. Arrived in North Woodstock, N. H., spic and span. 133 miles that day. . . . 21st: At Millerton, N. Y., we had a blowout which we had fixed and had also to buy a tire (having used all our three spares). Reached Dingman's Falls Hotel about 7:30 P.M., travel-

ing the last 15 and one-half miles in 25 minutes! Touched 40 miles an hour several times. We walked out to see Dingman's Falls, but couldn't see them."

The mileage of 148 per day in 1918 was equal to 450 of today. — HERBERT S. CLEVERDON, *Secretary*, 120 Tremont Street, Boston 8, Mass.

1911

It will please you all to learn that on Sunday, December 22, in Natchez, Miss., the marriage of Mrs. Gilbert Potter of that city and Livingston P. Ferris, VI, retired, Ashton Plantation, Lecompte, La., was solemnized at Trinity Episcopal Church; and immediately following the ceremony Mr. and Mrs. Ferris left for a tour of the Gulf Coast and other points south.

Mrs. Ferris, the former Miss Mary Anderson, is a native of Chattanooga, Tenn., her younger days being spent in Pine Bluff, Ark., and later years in Louisiana and Natchez, where she has been prominent in church, public, and social affairs. Among her special interests is the Natchez Pilgrimage.

Liv was born and raised on Ashton Plantation; and upon his retirement from Bell Telephone Laboratories in New Jersey in 1950, he returned to his childhood home, where he and his first wife, Vara, began the arduous task of restoring the estate and buildings. Unfortunately, Vara died not long after our 1951 reunion at Snow Inn, Harwichport, which they both attended. As Liv expressed it in a letter with a wedding clipping, which showed his wife as a most attractive woman: "It has been very lonely at Ashton these last years, and I look forward to Mary's transforming influence. Hope I can bring her to our 50th!" A long and happy life to you both!

Ottillie Cushman, wife of Paul, VI, Oklahoma City, Okla., added to the I. W. Wilson saga by sending a clip from *The Metal Showman* for December, published monthly by the American Society for Metals, showing a fine picture of Bun as one of five outstanding metals industry executives to receive distinguished American Society for Metals life memberships at the second Annual Awards Luncheon at the Palmer House, Chicago, November 8. In his acceptance, Bun said that whatever success the aluminum industry has had is due largely to research, and indirectly to the educational institutions that provide skillful personnel for this type of work.

Describing the U. S. A. as "a dynamic country, still growing and thriving under the free enterprise system," he said that spontaneous co-operation of a free people is the highest and best form of efficiency. "Knowledge and ingenuity are not the private property of any race or people," he concluded. "No individual or group can afford to rest secure in its own sense of superior wisdom. Those who become isolated are like plants without roots; they soon lose vitality and wither away. There is no reason why organizations like the American Society for Metals cannot lead the way in establishing co-operative efforts within their spheres of interest."

On Tuesday, January 7, during my annual pilgrimage to New York City for the

annual meeting of A.R.A.E. (American Retail Association Executives) at the Statler Hotel, President Don Stevens, II, with the able assistance of two of my fraternity brothers, Phil Caldwell, I, and Jim Campbell, I, arranged another "Welcome to Dennie" at the Architectural League. This year we had 14 present, including C. George Dandrow²², former Alumni Association president and this year's winner of the Technology Club of New York's silver stein, as a special guest.

There were only two exhibitors at the annual 1911 art exhibit, but between them they had seven works of art. Joe Harrington, VI, retired, New Rochelle, N. Y., had five lovely watercolors: "The Lobster Shacks," "Rockland Maine Coast," two portraits, and a picturesque covered bridge in Vermont. President Don, who works in oils, showed "Blaze of Autumn" and "Carnation Blaze." After the art exhibit and social hour, we had a fine roast beef luncheon and a "Report of the State of the Class" by Dennie — including a moment of standing at silence for twelve classmates who had died in the past twelve months — and then the usual interesting talkaround.

We were particularly fortunate to have Ralph Walker, IV, 1957 winner of the American Institute of Architects' centennial award, able to be present. Ralph told us of his interesting experiences when asked by the State Department to serve as chairman of a 14-member Benjamin Franklin Foundation Commission of 7 Germans and 7 Americans to build a memorial building in Berlin. Upon its completion, the American members of the commission arranged for a cultural show by 32 American artists in various lines. One thing that he remembered vividly was when Ethel Waters, one of the 32, was asked to comment on integration (it was about the time of the Little Rock episode) and she replied that she was "not interested in integration, segregation, or any other 'gration'" — she was just interested in "equality."

It was also a great delight to all of us to see Frank Osborn, III, now back in the U. S. A. after many years in mining in Chile, South America, who drove more than 100 miles from Vineland, N. J., just to be with us. He gave us a most interesting talk on Chile, which he has seen during more than four decades develop from a poor, agricultural country to a prosperous, mining and industrial country. Frank has spent most of his time since graduation with copper companies in South America, and the 1946 35-year reunion at East Bay Lodge in Osterville was the last class event he had been able to attend. Although with several companies over the years, he was able to hold his seniority, he said, and is very happy in retirement — although he can't resist doing consulting work from time to time.

Jim Campbell introduced our guest, George Dandrow, who spoke very highly of the regional conferences which M.I.T. holds; and when I was telling the boys about the honor paid Bun Wilson at the M.I.T. Regional Conference in Pittsburgh in November, George said he sat right next to the Chief, as he is fondly known in the industry, and was charmed with his personality and so happy to hear him

refer to 1911 in his response to the honor paid him. He urged Alumni to attend these regional conferences whenever an opportunity arises.

For himself, Jim Campbell said he had been going back to school again. With a partnership of mechanical engineer (Eadie), electrical engineer (Freund), and civil engineer (Campbell), he has been taking some refresher courses by attending American Institute of Electrical Engineers — sponsored lectures in electrical engineering — the only white-haired man there.

Cochairman Phil Caldwell, who came back from Florida for the event, told of the tough luck he and his wife had last February, when fire destroyed their house in Wilton, Conn. They are having it rebuilt, but spending this winter in Florida. He hopes to find some time there to paint, he said. Frank Russell, II, is still in the travel business and was nicely tanned, having just returned from a two-week trip to Jamaica. Everything was just fine, he said, except that Jamaica rum apparently paralyzed his larynx (he had laryngitis).

C. R. Johnson, X, who lives next town to Don in New Jersey, has, according to Don, made a great comeback during the past several years with his Spencer Products, which he and his son operate. The rubber companies are now coming to him, Johnnie says, where formerly he was a pedlar trying to sell his patented catalysts for 10 years or more. Now four of the big rubber companies are coming to him, he concluded.

Dick Ranger, VIII, President of Rangertone, Inc., distributed some attractive and interesting brochures on "Rangertone — perfection in synchronous sound." It contains a reproduction of the "Oscar" award Dick won and describes in detail the many facets of the work Rangertone is doing. For example, on television it was used on the Marian Anderson "Lady from Philadelphia" program recently on "See It Now," using batteries only at the time the singing was done; and the synchronization is perfect. More than two dozen prominent television shows are now using Rangertone, along with many film studios and record makers. National industrial companies are using the system, such as Allis-Chalmers, Ford Motor Company, General Motors, along with many schools and universities.

Royal Barton, VI, said that he and Jessie, a Miami girl originally, spent a year following his retirement in Florida, but had decided they just couldn't take the hot weather and are now back in New Jersey and have started building a new home within a mile of their former home in Mountain Lakes, which they sold. Erving Young, I, is now in his fourth year of retirement and he is happier than ever, he says, as a married man — he brought his bride to our 45th at Snow Inn, Harwichport. They are able to travel quite a lot and life is fine and rosy, he said.

Bob Morse, VI, said he was so pleased to be with us after having missed a couple of these events. He has been retired two and one-half years, but has no trouble finding things to do. He and Margaret sold their house in Summit, N. J., and have remodeled an old house in Sandwich, Mass., on Cape Cod for summer use,

living in a small apartment in Summit winters. (At this point, with so many references to retirement, George Dandrow asked if we'd heard of the retired man whose friends called him "Honeydew," for when they visited him his wife kept saying: "Honey, do this," or "Honey, do that.")

Joe Harrington, VI, also retired, said he was still a loyal alumnus of Esso, but nuclear physics has certainly become his real interest now. He has put in a lot of time in studying and reading and gave us a very interesting five-minute talk on this fascinating subject. He feels that the important thing for the long haul is the development of fusion, and here the extremely high temperatures produced make a real problem. "We are truly living in a wonderful era," Joe concluded.

Such regulars as General George Kenney, I, and Dick Gould, XI, were indeed missed. Both had planned to attend, but at the last minute something came up for each of them that prevented attendance. President Don, just before concluding the program, said he and Lois had done some traveling the past year, but he had nevertheless found quite a bit of time for painting. They were in Kansas City, Mo., visiting friends, within a mile of the devastating tornado in that area last fall; but fortunately only a hail storm hit them. They're hoping maybe they can make a trip to Hawaii this spring. Following custom, I was their house guest at Ridgewood, N. J., overnight; and Don's mother always so enjoys hearing the old Tech songs played and sung. I was also delighted to find Don and Lois's married daughter, Lois Streett, and her four-year-old, Dorothy, visiting there from Coopers-town, N. Y.

Of course we all sorely missed Nat Seeley, II, so I decided to get the up-to-date story from his wife, Louise, at Shippan Point, Stamford, Conn. She wrote that Nat was in a private mental hospital, well taken care of. "It had been realized by me for a number of years, and diagnosed in 1953 by the Yale Medical Center, that Nat's deterioration was moving rapidly. Tragedy indeed, but this latest stage is the least tragic — the gradual disintegration of what had been a good and delightfully original mind, was the saddest part.

"Our three sons are all fine and have married dandy girls. Frank, M.I.T.'42, lives in West Hartford, Conn., with a lovely wife from West Newton and three delightful children, from 15 to 7; he has his own business as a manufacturers' agent. Clinton, M.I.T.'51, got his M.D. at Rochester, then after two years' internship there, is now a resident in radiology at Massachusetts General Hospital, Boston. He married a graduate of Rochester, who is a pediatric nurse — fine professional training for raising a family, I should think. David, the youngest, is Yale'53, Yale Law'56, and is on the legal staff of the Department of Health, Education, and Welfare. He married a teacher, and they have a son, now one and a half, named Nathaniel Stevens Seeley, II. They were all here for the week end between Christmas and New Year's, as we had planned to celebrate Christmas on December 28 when all could come."

Cast Iron Pipe News for January has a two-page spread, titled "This Is Bill Orchard," with a fine shot of Bill, XI, at the phone, and a subtitle "Booster of professional societies, salesman extraordinary, and man of many other talents, he still sets a hectic pace in his daily life." Retired for almost four years, the article says, Bill continues as a director of and consultant to Wallace and Tiernan in Belleville, N. J. It's a fine article and does you real credit, Bill. We missed you at the New York luncheon, by the way.

Good old Norman DeForest, III, grower de luxe and shipper of Florida Citrus Fruits from P. O. Box 155, Maitland, Fla., again sent Sara and me a fine assorted basket of citrus fruit in mid-December, and was it good! If you want fruit freshly picked, tree ripened, carefully graded, and in perfect condition when shipped (and when received), just get Norman's price list and place your order. Um-m-m, good!

Delighted to receive a granddaughter announcement from A. T. Cushing, I, Kansas City, Mo., of an arrival October 27. This was the Cushings' first, and naturally a thrill, although they have three grandsons. "Although holding myself available," he wrote, "work has been scarce this year, and am living on pension and income from investments."

Congratulations to O. W. Stewart, I, of Kingston, Mass., on his election as president of the Massachusetts Cultivated Blueberry Association at its December annual meeting in Hanson. Two excerpts from Paul Cushman's Christmas letter are of interest, in connection with description of a transcontinental trip he and his wife took: "In Los Angeles we found Joe Gershberg, VI, living with his brother, who recently lost his wife." A penned addition: "Poor Joe, he can't sit still comfortably in one position any length of time, due to arthritis. At Sunol, Calif., we looked up Ed Blade, VI, who seemed well, vigorous, and belongs to a niking club. However, his wife hasn't been so well. Their son is a physics professor at Columbia University." A penned addition: "Ed is also public-spirited."

Jim Duffy, VI, wrote on his Christmas card envelope: "Have been meaning to write to you, Dennie. If Hell is paved with good intentions, I must be the prime contractor!" Aleck Yereance, I, retired, Arlington, Va., in a note of congratulation on my Bronze Beaver Award, said the reason he and Edna didn't attend Alumni Day at M.I.T. last June, as hoped, was that after reaching West Harwich, where they have a summer home, in early June, "some loyal Yankee bug, seeing the Virginia license plates and thinking the rebels were invading the North again, landed on my face and let me have both barrels of his poison. I had a cold, too; and before long my face swelled so that one eye was nearly closed, and I was in no condition to attend Alumni Day. A shot of penicillin and some other medication fixed it up eventually, but not until after the big day. Hope for better luck next spring."

Here's an address change for Paul Kellogg, IX, chairman of the board, Stevenson, Kellogg, Ltd.: Apartment 327, 3787 Cote des Neiges Road, Montreal 25, P. Q., Canada. Also at this mid-January writing,

Sara and I have moved from 28 Kendall Street, Framingham, to a brand new five-room apartment at 94 Lincoln Street, where we will always be happy to receive classmates and Alumni and friends. Please continue to use the Chamber address for mail, however.

Last reports available to class agents on the Alumni Fund (as of November 30) show 1911 continuing to travel high—second only to the Class of 1897—on percentage of Class contributing, and slightly above average on average subscription. We have been and are making great records in the campaigns since the Alumni Fund system was inaugurated in 1940, so let's keep it up!—ORVILLE B. DENISON, *Secretary*, Chamber of Commerce, 109 Concord Street, Framingham, Mass.; JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

1912

Dr. Walter Taylor passed away on November 14 at Williamstown, Mass. He had recently retired as head of the Chemistry Department of St. John's University in Shanghai, China. After graduating from the Institute, he took his doctor's degree at Columbia and went with the American Sheet and Tin Plate Company as research associate. Following this, he was in Shanghai for 27 years. During World War II, Dr. Taylor was held for more than two years by the Japanese and was repatriated on the second trip of the *Gripsholm*. He was visiting professor of chemistry at Williams College from 1944 to 1946, and later research chemist for the Sprague Electric Company, North Adams.

John D. Shore has been promoted to assistant professor of mechanical engineering at Northeastern University. Previously he had taught at Boston's English High School from 1925 to 1955.

Lawrence Cummings has retired as vice-president and director of the McQuay-Norris Manufacturing Company and is living at 900 West 8th Street, Connersville, Ind. He is kept busy with golf and fishing and is an ardent high fidelity fan.

Dave Follett is vice-president of the New England Lime Company; president of Gray Lock National Bank; and trustee of the Plunkett Hospital. He is living at 27 Forest Park Avenue, Adams, Mass.

Charles Dodge from Manchester-by-the-Sea, Mass., is actively carrying on the furniture manufacturing business started by his grandfather in 1841.

Wallace Murray is living at 100 Memorial Drive, Cambridge, having retired from the Arthur D. Little Co. He still serves as consultant in chemical engineering and fills his time with traveling and gardening.

Charlie Cary has retired as vice-president of the Du Pont Co., but is still serving as a director. Also is vice-president of the Welfare Council of Delaware and a director of the Delaware Light Company. He is living at R.D. #1, Wilmington, Del.

Albert Gale recently retired from the General Electric Co., where he has been in charge of the Small Turbine Design for many years. He is living on Depot Road,

Boxford, Mass., and is busy as a forester and farmer.

Henry Coddling is assistant to the electrical engineer of the Public Service Electric and Gas Company of New Jersey. He is living at 28 Carolin Road, Upper Montclair, N. J., and makes good use of his spare time in his woodworking shop.—FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. C. BOLMER VAUGHAN, *Assistant Secretary*, 455 West 34th Street, New York 1, N. Y.

1914

Only last month these notes told of an unusual brochure on nuclear activity published by Jim Holmes's company, Holmes and Narver of Los Angeles. It must have been his modesty that he did not tell of a party of his 700 Los Angeles employees in his honor to celebrate the 25th birthday of the company. A local press item just came to my attention telling of this event. It included this statement: "From a modest two-man beginning in the depression year of 1933, Holmes and Narver has grown into one of the largest engineering-construction companies in the country, employing thousands of men and women in eight states, the Territory of Hawaii, and the Marshall Islands." Before your Secretary is also a most unique Christmas Card. It is a 24-page booklet telling of a century since the Christian missionaries stepped ashore on Eniwetok Atoll of the Marshall Islands. In spite of the naval work of Holmes and Narver at Eniwetok, the booklet is simply a fascinating history of Boston missionaries there. If any Fourteener is interested in this attractive booklet, your Secretary believes Jim will be happy to mail one as long as the supply holds out. Jim's business address is 828 South Figueroa Street, Los Angeles 17, Calif.

Another booklet that has been received by your Secretary is the November issue of the *Exchange*, a publication of the New York Stock Exchange. It contains a most interesting article by Donald Douglas entitled "A Look at Sputnik."

An interesting note from Lucian Burnham, our retired Marine colonel, tells that he has recovered from an operation taking out most of his stomach, but from the outside it is hard to believe that the inside is missing. He is feeling in fine shape again. He also suggests that once retired Fourteeners get used to their increased activity they will then enjoy their retirement. Your Secretary adds yea, verily, he never realized how much of his work his secretary did!

Word has just been received of the death, last September 22 of heart attack, of Howell Taylor at Ann Arbor, Mich. Howell will be remembered especially because of his undergraduate activities. He prepared for the Institute at the Yale University School at New Haven, Conn. His home was at Adrian, Mich. His greatest activity was with *The Tech*, of which he served as general manager, also as editor-in-chief. He was a member of the Glee Club and also of numerous committees. He was a member of Phi Delta Epsilon, Kappa Theta, and other clubs as well as his fraternity. Howell spent most of his graduate life in the architec-

tural field, although some of his time was spent in the advertising field and also as a newspaper correspondent. His time as a correspondent included six years stationed at Beirut, Lebanon. His wife is the former Celia Brainerd, who, with his daughter Mrs. Ralph Schroder, survives him.—H. B. RICHMOND, *Secretary*, 100 Memorial Drive, Cambridge 42, Mass. HERMAN A. AFFEL, *Assistant Secretary*, 120 Woodland Avenue, Summit, N. J.

1915

Another sad shock for 1915 is the loss of Bill McEwen, who died Christmas morning in Wellesville, N. Y. Bill was sitting in his car in front of his house on North Main Street, after delivering Christmas presents. The car's motor was running, and it is believed he had his foot on the brake when he suffered a fatal heart attack and his foot slipped off onto the accelerator. The car sped across the street, struck a tree, and was demolished. Bill was president of McEwen Brothers in Wellesville, suppliers of oil well equipment, and had been retired for the past three years. He served in World Wars I and II and was active in many civic and community affairs. He is survived by his widow, Helen; a married son and daughter; and several grandchildren. Bill was an active, loyal, and generous supporter of all 1915 and M.I.T. activities and was a regular attendant at our five-year class reunions—always jolly and happy. We've suffered a hard loss and we'll miss him greatly—a fine fellow! We sent flowers and wrote to Helen, who answered: "Thank you for your warm note of sympathy and your tribute to Bill. Please extend to his classmates in 1915 our sincere thanks for the lovely flowers you sent Bill."

In answer to our letter of sympathy in Ken's passing, Edith King writes: "Thank you for your kind letter at the time of Kenneth's death. The thoughtfulness of all of our friends has been a great comfort to me. Since Kenneth had been completely blind in the past four years, he had become increasingly unhappy. As his strength failed, so did his great courage; and when the end came I could not wish him back to take up again the burden of his many afflictions. His patience and courage in the face of his misfortunes was a lesson to all who knew him in these years. Perhaps you did not know that he retired in 1949 because he had been told that he would be blind within five years. I have returned to La Jolla, where I expect to stay for this year at least. I am considering returning to Wilmington, where I feel I have more friends."

John Homan has retired to 14,164 West Parsley Drive, Madeira Beach, Fla.—more enjoyment to him. Congratulations to Alfred V. Coleman, recently elected president of New England Power Service Company. He has been in administrative and executive positions in several of the retail operating companies of the system; in 1950 he was appointed assistant to the president and in 1954, elected vice-president. In November, at the annual meeting of the Connecticut Public Health Association in Newtown, Conn., our own (Dr.) Stanley Osborn was presented the C.-E. A.

Winslow (M.I.T.'98) Award for long service to public health in the state. He has served continuously as Commissioner of Health since 1922. In addition, Stanley received from the Connecticut State Nurses' Association an illuminated parchment scroll in honorary recognition of his loyal support and interest to the nursing profession. That's a lot for one man to receive and surely an outstanding honor richly deserved. Congratulations to Stanley! Stanley wrote: "I just had an operation for my F.L.P.U. (Friendly Little Peptic Ulcer) and, no, not ONE, but TWO big class dinners coming up and I'm just out (November 18) of the Hartford Hospital after a subtotal gastrectomy, which means I have some left. Well, joking aside, am coming along fine — home on the 18th (operation was the 6th) and am out, ran the auto today, six meals daily — snacks in between. The idea is to expand what is left into a larger 'pouch,' which is working out; and I'll be on three squares in a couple of months." Too bad about his ulcers, but we're all glad he has recovered and has kept his sense of humor through it all.

Good Ray Walcott is looking after the 1915 monthly lunches at the new M.I.T. Club at the Hotel Biltmore in New York. I hope lots of you can get to them there — it's a good place and you'll enjoy seeing lots of our men and other M.I.T. men there. Ralph Hart enjoys a proud record of having contributed continuously in an unbroken record to the Alumni Fund since its start in 1940. In addition to this, Ralph has always been a ready, willing, and generous giver to all 1915 and other M.I.T. activities. Blessings on you, Ralph, and many thanks.

Otto Hilbert expects to be at the class dinner in New York and writes: "Helen and I had a nice trip to Banff, San Francisco, Los Angeles, Grand Canyon, Zion and Bryce Canyons in late September. We went by train and fortunately had good weather." Nice for them.

Phil Alger does his share for 1915 with some interesting news of classmates from whom we haven't heard in a long time: "This being the Christmas cheer season, and since I may not get to the class dinner on the 31st, I am sending you here-with a letter from Verne Kennedy and some notes from Christmas cards from other classmates who deserve mention in the class notes. Allison Williams'17 says: 'I am much improved in general and may be in New York about January 31.' Mrs. Ken Boynton says: 'Ken is loving retirement — his place, the locale, his church, civic, and charity work, and golf — more every day. And we take a South Pacific cruise in a matter of weeks.' (She writes from Biltmore, N. C.) Henning Berg says: 'Have retired as of October 1 and am enjoying it. Looking forward to '60 and another grand reunion; and with the Lord willing and health, expect to be there to partake of festivities.' I have one more year before retirement, after which we hope to make a trip to England and then settle down with a part-time teaching assignment of some sort. Having seven grandchildren already, it may be that we will take up baby sitting as a principal side line."

Verne C. Kennedy, President of

Streeter-Amet Company, Grayslake, Ill., wrote to Phil: "It was nice to have you write a few words on your Christmas card. It brings back old memories. No, I have not retired; and as long as I have as much fun out of work as I do now, such an event probably will not take place. Currently we are manufacturing weight recorders which were primarily designed for weighing freight trains in motion. This field has, of course, been extended to other force determination problems. In the last seven or eight years we have been manufacturing certain electronic equipment, mostly in the data reduction and force measurement fields. This has been most interesting and somewhat profitable. I hope that when you get to Chicago you will let me know so that we can get together. In passing, I might say that I have never attended any of the M.I.T. reunions. I doubt if I would know anyone if I did. However, if it would mean getting together with you for a visit, it would be worthwhile."

What a Class! on January 10 at the M.I.T. Faculty Club, Cambridge, these 26 classmates and guests gathered for another outstanding and enjoyable class dinner: Sam Berke; Bill Brackett; Whit Brown; John Dalton; Marshall Dalton; Dinger Doane; Sam Eisenberg; Wink Howlett; Clive Lacy; Larry Landers; Ernie Loveland; Azel Mack; Archie Morrison; Frank Murphy; Frank Murphy, Jr.; '57; Charlie Norton; Wally Pike; Pirate Rooney; Bob MacCormick; Bill Sheils; Jac Sindler'17; Frank Scully; Ed Sullivan; Bur Swain; Easty Weaver; Pop Wood. These class dinners are so enjoyable in continuing these old, firmly fixed friendships that there's little can be added to describe them. After cocktails and an excellent dinner by Bill Morrison, there were informal and extemporaneous remarks by a few of the chaps, mostly on recent personal experiences and contacts with other classmates. Marshall told us about affairs at M.I.T. and lauded Ben Neal for the wonderful results he has secured in such a short time for our 50th Fund. Have you given yet? Better write Ben. Ben had hoped to be with us, but illness and business (a tough combination) prevented him. We missed some of our regular attendants, who were ill, or surely would have been with us: Loring Hayward, Harry Murphy, Max Woythaler, Louis Young, Jim Hoey'43; but they are all improving, so that's a relief. Our guests are regular attendants and we always expect them and accept them as "regulars": Bill Sheils, Frank Murphy, Jr.; Bob MacCormick (guest of George Rooney). It was a delight to welcome these long-time-no-see men who, fortunately, will now be in circulation again with us: Sam Berke, John Dalton, and Frank Scully. Keen competition in the long distance contest brought out some spirited contestants: Sam Berke, Lakeville, Conn.; Charlie Norton, Martha's Vineyard; Ernie Loveland, Marion, Mass.; Wink Howlett, Cape Cod; John Dalton, Providence; and the WINNAH, Bur Swain, all the way from New York! Greater loyalty hath no man!

How's this for a column of notes? I'll be back in business next month with a report of the class dinner to be held in

New York on January 31, and the many friendly Christmas cards from so many of you. And that's really help for Azel. — AZEL W. MACK, Secretary, 100 Memorial Drive, Cambridge 42, Mass.

1916

Greetings from Ralph Fletcher with his reminder that our 42nd reunion will be held at the delightful Chatham Bars Inn, Chatham, Mass., over the week end of June 13, 14, and 15. Also greetings from Joe Barker, who expresses gratification at the initial success of our 50-year Class Gift Fund. Says he: "We are off to a good start, let's keep it up." And further: "The class luncheons at the M.I.T. Club of New York City (first floor, Hotel Biltmore) on the Thursday noon of the first full week of the month are well attended. If you are in N. Y. C. on those days, drop in at 12:00 noon and meet and eat with your classmates." At the January luncheon the roster read something like this: Joe Barker, Bill Barrett, Harold Dodge, Jim Evans, Gil Gaus, Earl Mellen, Stew Rowlett, Hank Smith, and Peb Stone. Tentative plans were discussed for a spring meeting in mid-May, when it is expected that Herb Mendelson will show some of his African pictures. Your Secretary was surprised at the luncheon with a one-candle piece of cake and a fancily (?) wrapped present (toy telephone for keeping contact with 1916'ers) in honor of his retirement from Bell Telephone Laboratories after 40-plus years of service.

By the time this note reaches print, Joe and Mary Barker will be off on a three-month trip to Portugal, Spain, Majorca, Italy, Switzerland, and maybe Greece, returning about May 1.

We have the sad duty of reporting that on December 19 Chuck Loomis passed on, following a long illness and a valiant struggle. Over the years Chuck has always been one of the most loyal members of the Class. Many will remember him as wearer of the T, captain of the class relay team in years (2) and (3), class president (2), New England 50-yard dash champion (3), editor-in-chief of *The Tech* (1), editor-in-chief *Technique* (3), and president of M.I.T. Athletic Association (4). Chuck went with Bemis Bag Co. when he graduated and was with them throughout his entire business life. He was manager of the Memphis plant from 1931 to 1947 and director of the General Personnel Department at St. Louis until his retirement in January, 1957. He was made vice-president in 1949 and a director of the company in 1952. A message of sympathy has been sent to his family by the Class President.

At the time of writing this (January 10), we have word that Steve Brophy and his wife are to take a three-months' trip around the world, starting January 30. Going by cargo liner and leaving San Francisco on February 4, they will visit Japan, Hong Kong, India, Egypt, Turkey, and Greece. They plan to stop off in Yokohama for 10 days, then fly to Hong Kong to go on with their ship. Steve is really enjoying his release from the competitive pressures of the advertising world.

Back at the reunion last June, Arvin Page promised un- or subconsciously to

write an extended story for the column. He has come across nicely: "I am still employed by the Bahnson Company, sometimes I wonder why. It certainly is not on account of the work I do. As you may remember, our company designs, manufactures, and installs industrial air conditioning systems. We try to avoid purely comfort work. While our largest group of customers comes from the textile industry, we do a fair amount of work in other industries. With the exception of the Communist countries, we pretty well cover the world. In most cases our foreign jobs are handled all the way through, except for design, by our local agents, although we are called upon for the installation at times. Right now we have installation crews working in Canada, Colombia, and Iran." Arvin goes on to tell about a business trip north last spring, heading for Newark, Delaware, and Wilkes-Barre, Pa. On the way he stopped off at Virginia Beach, talked on the phone with Clint Carpenter, who advised Arvin that he expects to attend the next reunion.

Further on he stopped at Judd Vile's home in Salisbury, Md., only to find things locked up. But he left a note, and has since learned from Judd that there was no one home at the time, and that Arvin had better stop again. "In fact, he wrote that if I wanted any dope on him I would have to call again, so I am unable to tell you what he is doing. After stopping in Newark we went on to Wilkes-Barre. I phoned, or rather I tried to phone, Jap Carr. The operator reported that his phone had been disconnected. The poor fellow probably cannot even pay his phone bill. At least that is what I might have thought at the time. I got the true explanation later on when we stopped in the Poconos on the way home from Chatham. We had dinner with Jap and Hildegard at that time. Dinner was somewhat delayed because Jap was playing for the championship in some tennis tournament, which he won, of course. We spent a very enjoyable evening with them discussing the old days in Akron and other subjects. In case you are interested, Jap had his phone disconnected when he left for Palm Beach early in the winter, and at the time of my phone call he was still in Florida." Arvin is still on the North Carolina Board of Registration for Engineers. The National Council met last October in Atlanta with representatives in attendance from every state except Washington. He says: "Among those present was Ed Barry, who is chairman of the Massachusetts Board. He is still with Stone and Webster in the Boston Office and looks little different than he did when he gave a lecture on the 'Fourth Dimension' to the Student Branch of the American Society of Mechanical Engineers about 1914."

It's late to talk about Christmas messages but we had a flock of most interesting ones. Don Webster's card shows his whole family around the piano — Mr. and Mrs.; son Donald, Jr. (University of Maine '59), and wife and two children; son Philip (Cornell '60); son Peter (Trinity '57); son David (Bowdoin '57); and "on piano, Toby, 14, no college." Then we had an absorbing "Christmas Greetings" account of Joel and Virginia Connolly's fifth

year of experiences in the Far East, from their home in Taiwan. By the way, Joel can be reached by ordinary airmail, six-cent stamp, at the address M.S.M./C., A.P.O. 63, San Francisco, Calif. Letters reach him in Taiwan (Formosa) in just two or three days, and both he and Virginia are most grateful for newspaper clippings, front pages of current newspapers, snapshots, and so forth. They say: "Our lives have been enriched by the friendship of many friends, far and near, and by having work which is much needed in this part of the world. One of the most pleasant episodes was a four-day outing in the mountains of central Taiwan (Formosa) July 4 to 7. This period was spent at Ali Shan at an elevation of 7,600 feet, with mountains up to about 13,000 feet visible in the distance. Five of our Chinese friends accompanied us to Ali Shan on a narrow gauge logging railroad which goes through a seemingly endless succession of tunnels and, in one place, rises in a spiral, making three complete circles to gain altitude. The aborigines inhabiting Ali Shan have pink cheeks and many are strikingly beautiful. There are 150,000 aborigines in an estimated 10,000,000 total population of Taiwan at this date."

They spent their vacation in Japan, visiting Tokyo, Kamakura, and Nikko. Joel with three American friends had a two-weeks' mountain climbing trip in Japan Alps, northwest of Tokyo, which included walking about 200 miles and sleeping for the most part in mountain huts with Japanese climbers. "An interesting, and for Americans an unusual, experience was the all-night third-class railroad trip on the climbers' return to Tokyo from the mountains. The sleeping people in the aisle were so closely packed that the candy and ice-cream vendor could not walk through the car to sell his wares." They go on: "We have seen a number of extremely interesting events during the past year. Ching Ming day, when graves of ancestors are tidied up, was one of them. We saw bones which had been interred for several years and then exhumed. A man was cleaning them, painting the skulls, and putting them into large jars for future storage. Many burials take place on Ching Ming, as it is considered to be a propitious date. Sealed coffins are said to be held, sometimes for a long period, in order to bury them on that day. We watched some of the elaborate ceremonies accompanying the burials." There is more to their message, about the friendliness of the Chinese people in free China, Joel's work, and so forth, but we must stop. They expect to be back in the States on home leave in August, and we hope Joel will make his presence known to many of you when he arrives.

Now, we'd like to go on with a bit more about Herb Mendelson's African safari last summer. Our last installment had Herb and Vi and his coterie of 16 in Tanganyika, with not too great accuracy so far in his shooting, but arriving 15 miles up river, a trip that dispelled the gremlins from his rifles. Here he got a male kudu — an excellent trophy. The party then headed northwest towards the southern end of Lake Victoria, where they arrived after three days of travel. Says Herb: "We

set up our camp near a game ranger's camp. On the second day, we located a small herd of sable antelope led by an excellent bull. Ngoro, the other gun bearer, and I started the stalk from down wind. We inched our way through the open forest along the slope of the hill slightly above the valley where we had located the herd.

"After about 30 minutes, the last 10 crawling on all fours, we peeked from behind a baobab tree and there was our brave bull encircled by eight protective cows. Question: how to miss the cows and get the bull. We cautiously crawled over behind an ant hill some 15 feet high and peeked around the edge; and there at about 150 yards stood our bull in the clear. I climbed up and clobbered him above the foreleg. At that moment a rhino, who had been watching the proceedings, charged towards us, then veered off to one side when he spied the jeep, which was coming up the valley after my shot was heard. Within 15 yards of the jeep, he headed off through the woods. Well, I now had my second sable, so we packed up and left for Bukoba on the west shore of Lake Victoria.

"From there a 125-mile drive to the west took us to our next hunting area, where we set up camp high above Lake Rushwa. Our first reconnaissance resulted in locating numerous excellent waterbuck, and a few shootable rhino, as well as many smaller antelopes such as reedbuck, bushbuck, and sitatunga, the latter frequenting the papyrus swamps bordering the lake. My first day's hunt here and one shot netted a really fine waterbuck. We also located three rhinos, two being males of shootable size. The next morning after a four-hour search, the gun bearers and trackers located the two rhinos about a mile apart taking a siesta in the long grass.

"Now you can't shoot at a rhino when lying down because of the difficulty of locating the heart and lung area, so as to place a fatal first shot — a must in shooting dangerous game. The long grass added to the difficulty, so we returned to camp and waited until late afternoon, when we expected the rhinos to be feeding and heading toward the lake for water. Upon our return, sure enough, both rhinos were up and munching grass about half a mile from where they had been bedded down for their siesta. After much tree climbing, to glass the beasts, and discussion as to the stalk, Andrew, Sungura, and Ngoro, armed with two double barrel .470 calibre rifles and a .300 Magnum, and I, armed with a .375 H and H Magnum, started the stalk to the valley, where the largest of the two rhinos was feeding. After fighting our way through wait-a-bit thorn bushes, high grass, and dense undergrowth, where any moment we might stumble on a rhino, buffalo or lion, we finally reached a comparatively open glade; and there stood our rhino.

"Now in shooting dangerous game one never shoots off hand but tries to pick a tree for support or takes a sitting or prone position, the latter rarely possible because of the high grass and undergrowth. The gun bearers or white hunter *never* shoot at game unless it's a matter of life and death. I braced myself against a tree, took a sight about one-third of the way up the

rhino's body above the foreleg, held my breath, and carefully squeezed the trigger. Wham! and the rhino was off. This is the time Andrew and Ngoro, to my great surprise, went to town with their .470 'Cannons' as four shots in rapid succession rent the air. The rhino already was weaving through the trees and dense brush, and I couldn't get in a second shot. We started after him at a stumbling run; and there, 100 yards away, lay the beast breathing his last. He had just one bullet hole over the foreleg — my .375 Magnum. This was ample retribution for the razzing I got the first two weeks of the safari, and I learned to my surprise that experts as well as tyros can miss a huge target at 30 yards. I sure was glad that rhino was running away, instead of charging us."

That ended the hunting safari. They left the lorry in Bukoba and proceeded by jeep on a trip through the Belgian Congo, with its primitive Pygmies and proud, quite civilized Watusis. Herb has promised a showing of his movies and snapshots of the Pygmies — some of the shots are quite unusual we understand. So stand by, if you're anywhere in New York!

And now we have the promised final installment of Francis Stern's account of his extended trip to Europe, a little over a year ago: "On to Genoa and a few lovely days at Portofino, which I recommend as one of the most charming and perfect resorts with a marvelous hotel. The most interesting ride along the Italian Riviera takes one across the Bracca Pass and along the shore at La Spezia, where the Italian fleet has been built and which is a large shipbuilding port. We then went to Florence, where for two weeks we literally soaked up the art and lore of the Medici. Harold, if you haven't been to Florence — and I'm ashamed to say although I lived abroad for many years, this was my first trip — you should go. I'm glad that I did do the reading I made up my mind to tackle before I got there, for the wealth of art that exists is so overwhelming, that without some background material to prepare one, the magnitude would make it impossible to absorb. We hated to leave. But we had planned to visit the hill towns on our way to Rome, and November was getting on, and the weather did not promise to hold out much longer. As a matter of fact, our stay in Rome was particularly devoid of sunshine; but the warmth of our reception there and the glories of the city — past and present — made up for dull skies. Neither two weeks nor two months would permit one really to know Rome, although we were fortunate in being royally entertained and being escorted by local friends to many places which, as tourists, we might not have known."

"Our plans for returning were drastically changed because the *Independence*, on which we had expected to sail, never left New York due to the dock strike which, you may recall, took place last fall. So after a few hectic days, we got accommodations on the *Queen Elizabeth* and drove from Rome back north on the same road, through Genoa to Cannes. There I turned my car over to the Citroen Co., for I had made arrangements at the time of purchase to return the car to them

in the event I did not want to take it back to the States. Although ideal for foreign usage, I found the car somewhat light and was fearful of driving it back home. I was glad, with the gas rationing that existed at that time, that I had an 'out.' We took the train to Paris, remained overnight, and then onto our ship at Cherbourg, which brought us, six days later, back to New York after a splendid trip on one of the finest steamers in the world. The *Queen Elizabeth* is certainly luxurious, and with the excellent accommodations we were fortunate enough to get at the last moment, we came back thoroughly spoiled, I'm afraid, for future trips."

Back in December we saw the genial face of Vannevar Bush in the financial pages of the *New York Herald Tribune*, with the caption: "Heads Merck: Dr. Vannevar Bush, one of the nation's leading scientists today, became chairman of the board of Merck and Co., pharmaceutical company." Here's a real case where we can offer loud congratulations to both sides!

We've just seen another of Dick Berger's impressive releases on cancer prevention. This one carries the headline "Prevent Cancer — It Can Be Done!" It gives a summary that is frightening and makes one think. Headings in this release include: "What is Cancer? Why is Deadly Cancer Increasing? How Prevent? Common Causes of Cancer. Our Sordid Cancer Situation. What to Do Right Now to Help Reduce Cancer Debacle." For a copy write to Dick in Bridgeport 4, Conn., for Release H7.

In the November 3 Sunday *Herald Tribune* of New York, an article from Manchester, N. H., features a story about the MKM Knitting Mills, Inc., indicating that knitwear manufacturing has grown from a "kitchen industry" to a mechanized operation. The MKM president is none other than Barney Gordon. He has headed the 39-year-old company since 1940. In a plant tour, the writer of the article was shown rows of clicking machines that roll out 60,000 full-fashioned women's sweaters and 32,000 pairs of women's hosiery a week — a startling 25 per cent increase over the 1956 production. In postwar years mechanization has apparently kindled a revolution in the production of full-fashioned apparel — that is, apparel that is knitted to its final shape rather than cut from a pattern and sewn.

"Today such firms as MKM, a leader in the field, are swinging more and more to mechanical operations and, through volume production, have made full-fashioned items a medium-priced product. Nine months ago MKM put into operation a machine that knits 15 sweaters simultaneously. The firm has a staff of mechanical engineers to develop new machinery and a laboratory of 22 technicians for research into dyes, raw materials, yarns, and other aspects of apparel production." MKM employs more than 3,000 persons and has nine plants in New England, the South, and Puerto Rico.

Flash! Bryant Reeve (Austin B.) and his wife Helen have published *Flying Saucer Pilgrimage*, Amherst Press. Perhaps you are still puzzled about flying saucers. Here in this book may be the solution to your

quandary — the story of their amazing private research which took two years' time and over 23,000 miles of travel. Some details will be given in the April issue.

Again we come to the end of the column urging that you send in a bit of something often (starting now, please) to keep the column coverage as wide as possible — what you've been doing, where you've been, who you've seen, what the children or grandchildren (how many) are doing, and so forth. Note at the end of the column, your Secretary's address, changed at the end of January when the retirement rule caught up with us. — HAROLD F. DODGE, Secretary.

In order to relieve our overworked Secretary from writing a report about himself, this newsworthy item is contributed by a classmate and associate in the telephone business.

Harold Dodge retired from the Bell Telephone Laboratories on January 31, 1958, after over 40 years of service with that organization. He made his principal contribution in the development of Quality Assurance and is an outstanding authority in that field.

Harold's retirement was the occasion for a most impressive tribute from many of his associates from far and near. Some 200 people assembled in a private suite at Hampshire House in New York City, complete with loudspeaker system and highly enjoyable refreshments. There were a master of ceremonies and several eminent speakers, each of whom presented a remembrance with an appropriate eulogy. Mrs. Dodge contributed her charming bit in the receiving line, and their daughter also attended the party. Harold said his retirement was only from the Bell Laboratories and that he expected to do some consulting and teaching whenever he could spare the time from his primary duties as class secretary.

The Class of 1916 members residing in and about New York also honored Harold at their monthly luncheon at the M.I.T. Club of New York on the same day. A grand time was had by all in attendance. These 1916 luncheons are held on the Thursday noon of the first full week of each month. All 1916 men in New York on that day are cordially invited to attend. — JOSEPH W. BARKER, Vice-president. HAROLD F. DODGE, Secretary, 96 Briarcliff Road, Mountain Lakes, N. J.

1917

Win McNeill's bright idea of having the regional vice-presidents gather class notes has given us a lot of news in recent issues. Now he has put the bee on the Assistant Secretary to cover the sizable New England contingent. It is January. Responses are coming in, and it is time to start compiling as the dead line approaches.

Phil Hulburd writes from Meriden, N. H., that he has been on a half year's leave of absence and expects to get back to Exeter, on the job, in early February. "We had planned to be here in Meriden until October and then take a trip to South America. But the doctors got me in their clutches in August, and I wound up in the Hanover Hospital in October—in-

stead of on a ship! The surgeons did a fine job of removing gall bladder and appendix, and I have been at home since the first of November taking life pretty slowly and doing practically nothing but sitting around and reading. We got the house and gardens put to bed for the winter before I went to Hanover, so there haven't been the usual fall chores to do here since I got back.

"Tomorrow we are off for three weeks on a Grace Line cargo ship to Venezuela, stopping at Maracaibo, Puerto Cabello, and other ports.

"Here, it is rather springlike. We had some snow earlier; but it is long since gone, and we seem to be having the 'mud season' ahead of time."

Rudy Beaver always seems to be on the go, and here is what he has to say of his latest trip: "An English girl told us, 'You Americans have been to Europe, but you haven't seen your own country.' So to correct that, Helen and I, after summing in New Hampshire, packed up and set out 'to see our country.' For 10 weeks we drove 10,000 miles, meandering through these United States, and marvelled at their beauty and extent.

"There is much sameness, but there is also great variety. We naturally used Boston and New England as a yardstick. What contrast in street layouts! Thus, Detroit is about planless. Denver conflicts: streets in one region are north and south and east and west; while those in another large region run 45 degrees to the above. Salt Lake City is serene and orderly. In three days there, as well as on former visits, I have never seen a policeman.

"San Francisco is the most marvelous of places. For an unforgettable experience, just drive an automobile up Taylor Street or down Lombard Street between Hyde and Leavenworth, the snake road. Route 1, north of San Francisco, is a frightening road—one of the 'Resume Breathing' kind. The beautiful climb out of Oak Creek Canyon, Arizona, into Flagstaff, is the equal of anything I have seen in Europe. I now have new respect for an automobile. After seeing Carlsbad Caverns, I am now tempted to say there ain't no such place.

"It is getting late to enjoy such a trip. The terrific population pressure on the West Coast is frightening. The universal practice of 'come as you are' disgusted us. Everywhere west of the Middle West the belching diesel truck behemoths foul up the beautiful countryside. The radio was uniformly lousy. In California we expected the nicest fresh vegetables and fruits. Instead, we received canned or frozen orange juice, canned vegetables, and no fruit. Seems everything is shipped east.

"However, the weather was beautiful. Each evening Venus greeted us, like an old friend from home, only so much more brilliantly than in the murky atmosphere of the East. And it was nice to have lunch with Henry Strout in San Francisco and Ras Senter in Dallas."

Ray Stevens has been appointed chairman-elect of the Board of Directors of the Gordon Research Conferences. These conferences, begun in 1931 at Johns Hopkins University, are held each summer at three New Hampshire campuses. Scien-

tists and research people from all fields gather there informally to exchange their views on recent research.

In connection with the award which Jim Flaherty won in "Factory's Significant Plant Competition," Jim reports that Hightstown Rug Company has completed its objective by adding a new unit each two years and runs the best part of three shifts. Jim asks about a tidy gathering at our Endicott House for 1917.

Bill Colleary writes from Vero Beach, Fla., that the reunion news was most interesting as a resumé of the best party '17 men have ever had due to the presence of the Fairer Sex. Bill continues: "Operating alone (architect), as I have for 37 years, I found that when I had no commission (which was often) we did not dare to go away; and when I had a job, we could not! So as time is marching on and shadows lengthen, we said, 'Let's do it!' So we are here until April '58."

Stanwood Barrows (now generally called Roy) writes from Groton, Conn., on just arriving back from a vacation cruise to Bermuda and Nassau: "I have been involved in the design of ventilation systems on submarines for most of the 26 years I have been with the Electric Boat Co. of Groton (now Electric Boat Division of the General Dynamics Corp.). I can't say there is anything outstanding about my job; in fact I was of more value to my employers as a draftsman when it was a smaller company than I am now as a supervisor since it has become large.

"My hobby was tennis until age 45, but took up golf at that time and have stayed with it ever since. I have been blessed with good health and a wonderful wife (will be 40 years in July), two fine sons and six grandchildren. Both sons got their single engine wings during World War II.

"This just about wraps it up, except to say I knew enough to quit smoking about 20 years ago but still enjoy a couple of drinks once in a while."

Henry (Hank) Stagg writes from Bridgeport, Conn.: "One of the things that I have been noticing in the class notes and with increasing rapidity is the number of '17 men retiring. Fortunately I am able to carry on with our supply business (Hawley Hardware Co.), jointly owned by my brother Dwight and myself. It looks as though retirement is a long way off for me, with my son Jerry a freshman at Brown University and daughter Susan in her junior year at Walnut Hill School. I was sorry to miss the 40th reunion, but my kid's graduation balled things up."

Dick Loengard asked to be relieved of the responsibility for the 1917 Special Gifts activity, and Al Lunn is taking over. Here is a paragraph from President Stevens' letter to Al: "I am delighted, indeed, that you agreed to undertake the responsibility for Special Gifts for the Class of 1917, leading to the 50-Year Class Gift. I hope that this will not prove an arduous and time-consuming matter for you, although I am fully aware that such effort as is required must be added to the substantial amount you are now giving to a number of significant good causes. I am sure that everybody in 1917 joins with me in appreciation." (Very well stated, Mr. President, and thanks to you, Al; also to you, Dick, for the work you put in.)

Low Sanborn writes on the letterhead of Converse Rubber Co.: "Your request for class notes really hits me at an inauspicious time, since for the last six months or more I have done absolutely nothing of a newsworthy nature; nor have I seen a single member of the Class to talk to. It seems quite a little time, after seeing so many of the fellows at the reunion, which, incidentally, Mrs. Sanborn and I enjoyed very much."

Our Secretary passes on to me a letter from Class President Ray Stevens wherein Win has deleted Ray's first paragraph, which congratulated Win on the "high standards being set for the 1917 notes." After the well deserved words, Ray's letter continues: "Yesterday (December 12), I attended a Convocation at Northeastern University and had lunch with Dean Gramstorff. Gram is now one of the senior top men at Northeastern, which school, as you know, has grown enormously to become one of the major institutions of this area. Gram said that Fred Stearns had recently been in Florida where illness, I believe of his grandchildren, had required some special attention. I believe he is back at school now, as is Al Ferretti, who is also on the staff.

"I saw Walt Whitman in New York last week, where he was the presiding officer, as he is so frequently, this time at a chemical award dinner run each year by McGraw-Hill's publication, *Chemical Engineering*. Walt serves as chairman of all the heads of chemical engineering departments at accredited schools in the country in selecting the award and presenting the awards at the formal banquet. This he does in his usual masterful style. I also saw Ed Aldrin in New York and had lunch with him at the Wings Club. He is acting as consultant, using his extensive background and, as always, keeping active.

"I must confess that I do not dare read our class notes to Katherine because so many of the correspondents have retired and are enjoying relief from what our dear friend from the end of Cape Cod called the well-known rat race. Lobby and Conchita are now in Mexico, and much of his talk is of the pleasures of retirement there in a very short period of time now. A Christmas card from Ken Bell suggests that he is probably in Pakistan; and I assume that we will, in due course, get adequate correspondence from him. Unlike so many others, he seems busier after retirement than before the great event."

Ted Haviland spent time at the Massachusetts General Hospital this fall for eye surgery and has returned to Ridgewood, N. J., awaiting results. We were sorry to learn of this too late to call on him. Chris Crowell is having a session at the New England Deaconess Hospital, Boston, where he has been for four months now for extensive surgery. His wife, Olive, reports progress.

Class notes often give the impulse to write to some classmate, but it is not done because of lack of late address. Any letter sent care of the Alumni Association Office will be forwarded, or I will be glad to secure any address. — W. I. McNEILL, *Secretary*, 14 Hillcrest Avenue, Summit, N. J. STANLEY C. DUNNING, *Assistant Secretary*, 21 Washington Avenue, Cambridge 40, Mass.

This life is an experience in which stirring adventure beckons to us all, despite the fact that so many view it dimly by the light of a smoky kerosene lamp. One who has always needed and somehow found more rivers to cross, is Don MacArdle. Herewith is his addenda to our dispatch of last month concerning his adventure with one of the top quiz shows:

"You got all the \$64,000 story that went out over the air, but not all the story. The question that I fell down on was, unbeknownst to the program management, a catch question. The question as posed to me was: 'In whose honor were the *Abegg Variations* written?' The answer is, nobody's. They were dedicated to a Countess Pauline Abegg, but no such person ever existed. Composers, like quiz contestants, sometimes have a few buttons missing; and Schumann was no exception. (He died in the insane asylum.) Repeatedly during his life he dreamed up nonexistent people to write to and to dedicate music to, and Countess Abegg was one of these. One of Schumann's buddies had a girl friend named Meta Abegg (not Countess, just plain Meta). Schumann was acquainted with her (probably), but the only thing that interested him about her was her name, made up of five notes of the scale. He built a melody from these, and there was the theme of the *Abegg Variations*. So, in whose honor were they? Not the nonexistent Pauline; not the unimportant Meta (not even mentioned in the dedication). Answer, nobody. My mention of Clara Schumann was a stab in the dark, after Hal told me to guess. I might just as well have said, Harry Truman. I was greatly disappointed, of course, and chagrined to fail on the first question that was not too simple for the program; but that's the way it went. Of one thing I'm sure: the program management had no idea that there was a gimmick in the question. They make them tough, and rightly so, but as far as I know mine was the first one ever that was not straightforward. I am convinced that the program and the men that run it are on the up and up. It's just that here somebody used an inadequate reference book, that omitted the details that made all the difference between my staying and falling on my nose. Could be that some time I'll have another go at it?"

The *Wall Street Journal* of December 12 reported that Robert T. Collier has been elected president of the Collier Carbon and Chemical Corporation (a subsidiary of Union Oil of California), formed earlier during the year by the merger of Brea Chemicals, Inc., and R. T. Collier Corporation. William Chapman Foster, executive vice-president of Olin Mathieson Chemical Corporation, received national publicity during January for his work as acting chairman of the committee which turned out the celebrated, and at this writing still suppressed, Gaither Report on national military preparedness. Neither Bob nor Bill collected a diploma from M.I.T., but both had the qualities which go places. As my farming uncle used to say, "You can't tell how far a frog will jump by counting the spots on his legs." Ben Cohen, whom I last heard about as a refugee from Course XIII located in

Augusta, Ga., and now apparently of Worcester, Mass., got his name into some paper (unidentified clipping at hand) for suggesting that: "the colleges send a wage scale to all employers of engineers. And that a rule be enforced that any employer who paid below the minimum scale be denied any future graduates from engineering colleges. This is the only solution to the shortage of engineers and other scientists."

A short note from Harold Weber has a unique letterhead consisting only of "Harold's House." He says he has been away so much his wife hardly recognizes him any more. A note from Fred Philbrick says that after much backing and filling by prospective customers, he has sold the house he built last year, and also the remainder of his lots. So he is out of the real estate business for the present. He also reminds me that we have been out of college for 40 years, come June. Any report from the Reunion Committee? — F. ALEXANDER MAGCOUN, Secretary, Jaffrey Center, N. H.

1919

Ervin M. Kenison writes from Washington, D. C., that he is still with the Federal Power Commission. And that the Supreme Court ruling regarding independent gas producers has been keeping him busy. "Family are all well. Still progressing in duplicate bridge, and hope to achieve the highest rating of Life Master this year." Good luck, Erv!

Don Kitchen's wife Evelyn sends in a careful of news about Don: "He is being written up for the *Insulation Magazine Men in Insulation*. . . . We went to Montreal recently, where he gave a paper before the American Institute of Electrical Engineers. He also read two at the Pocono National Research Insulation Conference in October. Will be in New York in February, where he gives another before A.I.E.E. Expects to go to the West Coast to give a paper in August '58 before the A.I.E.E. summer meeting." She adds that all three sons were with them at Christmas for the first time in years, an occurrence which made it a happy occasion for them all. Son Charles just had an appendix operation but is recovering nicely. Best regards to all from Don and Evelyn.

Wirt Kimball, reporting in from Boston, says that he and Mrs. K. are enjoying excellent health and hoping that their next cruise will be as wonderful as the one they took last October. He says, further: "Our son Clark is a junior at the University of Maine and doing well, according to all reports. Incidentally, his graduation will conflict in time with our Class's 40th Reunion, which is unfortunate." As Wirt says, with business good, and all the family well, he feels most fortunate. But he remarks that he seldom sees any classmates nowadays. He sends greetings to all. (Thanks for the kind words about the class notes, Wirt.)

Word concerning George F. Magraw (graduate in mechanical engineering AND a Universalist minister) is that he is the first departmental education supervisor of the Massachusetts Department of Correction.

We were very sorry to learn from Francis A. Weiskittel that his lovely wife

passed away on December 15 after a three-month illness from uremic poisoning, leaving Francis and three youngsters: two boys, 11 and 12 years; and a daughter, 9. Please know, Francis, that you have the sincere sympathy of all your classmates.

A clipping from the *Milwaukee*, Wis., *Sentinel* reveals that Alan G. Richards has been appointed manager of client relations of Bjorksten Research Laboratories, Madison, Wis. He will make his headquarters at the company's branch office in Washington, D. C. Alan had been director of applications for Bjorksten at Madison for the past two years. Send us your full new address, Alan!

Dick Holmgren, writing from San Diego, says he has no special news other than that they are hard at work on the construction of a new \$52 million aqueduct to bring more water to San Diego County to try to keep up with the tremendous population increase.

Brian O'Brien resigned from his position as vice-president of the American Optical Company as of January 1 this year. He will continue to act as a consultant to American Optical Company on a part-time basis, but will also render service to other industrial companies and scientific and educational institutions. His former work will be carried on by Stephen MacNeille, who got his Ph.D. at M.I.T. in '37.

Harry A. Kuljian was a principal speaker at a huge naturalization ceremony sponsored recently by the Philadelphia Bar Association and the Association of Immigration and Nationality Lawyers, at which U. S. Judge George A. Welsh presided. His speech was a fine one, and should have been a source of inspiration to the "new" Americans who heard it, and all others as well. Harry is certainly a living success story of what an immigrant can accomplish in the United States of America.

New addresses have been received for the following: John H. Nelson, c/o M. E. Whiteside, 4232 40th Street, N. W., Washington 16, D. C. James W. Reis, Jr., Apartment C, 1702 Fair Oaks Avenue, South Pasadena, Calif.

If any of the rest of you have new addresses, please send them along to your Class Secretary. And also give us word of what you've been doing, and about any classmates you may have encountered recently. We appreciate the co-operation, and are happy to hear from you . . . OFTEN. — E. R. SMOLEY, Secretary, The Lummus Company, 385 Madison Avenue, New York 17, N. Y.

1920

As always, K. B. White remembered your Secretary with one of his exceedingly attractive and colorful Christmas cards from Paris. As far as I know, he still shuffles back and forth between Paris and New York and still maintains his residence in Union City, N. J.

I am happy to report that I had good 1920 company to welcome in the New Year. Buck Clark and his charming wife were at the Inn at Steele Hill, Laconia, N. H.; and Amy and I spent a very pleasant New Year holiday with them there. Buck runs the Hartford office of Estabrook

and Company and has retained his youth and vigor better than most of us.

John Barker was recently elected an officer of the Portland, Maine, Alumni Chapter of Phi Gamma Delta Alumni Fraternity. Ed Farrow is Grand Consul of Sigma Chi.

Sam Schenberg, Supervisor of Science of the New York City Board of Education, recently conducted an interesting study to determine the extent to which the science program in New York City's 55 high schools was meeting the demands for scientific manpower. The study involved nearly 28,000 students. According to the Superintendent of Schools, Mr. Schenberg "has made a significant contribution to science education."

Your Secretary and his twin brother, Perk, put on a joint talk to Professor Schell's graduate students early in January, the subject being on the blue sky basis of what two Course XV graduates learned from their business experience that they didn't learn at M.I.T. This gave us plenty of scope, and I can say that it was a stimulating experience. Whether or not the boys enjoyed it, Perk and I certainly did.

I might point out that I'd much prefer to provide some news in these columns about you rather than about myself. How about it? Won't you drop me a line? — HAROLD BUGBEE, Secretary, 7 Dartmouth Street, Winchester, Mass.

1921

1921 was there! Havana, Cuba, that is! The first of any of the M.I.T. classes to hold an official reunion so far away from campus, and actually outside of the United States in a neighboring republic. Modesty restrains us from recounting the many additional "firsts," such as the innovation of a winter reunion date, the welcome appearance and 100 per cent attendance of wives, the arrival of everyone by air, and so forth. Almost every statistic of the unique celebration constitutes a "first" of some kind. The event will stand out on M.I.T. records as another in the many endeavors in which the Class of 1921 has pioneered to show the way in fashioning and proving in new ideas and procedures for the immediate pleasure and benefit of its own members and the ultimate use by the Institute for the good of other groups of Alumni.

Again we find ourselves in the doldrums of the world of class news — that interim period of long lead time prior to the event, wherein it is well nigh impossible to prepare postdated news from predated information. With patience on the part of you readers who were lucky enough to travel to Havana and those who unfortunately missed the sparkling reunion, we will tell all in the May issue of *The Review*, some five months hence, as we zero in way back here during the first weeks of January, wondering how we'll ever manage to struggle through the April issue. "29 members of the Class of 1921," that story will say, "were accompanied by their wives on a four-day round of gayety in and around the 'Pearl of the Antilles.'" The three additional couples since last month's report are Phil and Edna Coffin from Pittsburgh, Ted and Mrs. Rose of Miami, and Rufe

and Madeline Shaw of Beverly, N. J.; and we're mighty glad they decided to join the party.

Edwin T. Steffian, prominent Boston architect, Assistant Secretary of the Class, and very active chairman of the 1921 Reunion in Havana Committee, has been deservedly honored by his election to the presidency of the Boston Society of Architects. Henry R. Kurth, Vice-president, Boston Edison Company, and class representative on the Alumni Council, and Mrs. Frank Burke of Framingham, Mass., the former Miss Laura Keyworth, were married at the Cathedral of the Pines, Rindge, N. H., on August 24, 1957. Chick and Laura make their home at 126 Glen Road, Wellesley Hills 81, Mass. Congratulations to Ted and Chick, and a hearty welcome to Laura to join the big 1921 family circle.

One of the many happy times for a Class Secretary comes at the holiday season with the arrival of good wishes from Technology friends of various classes. Maxine and your Secretary sincerely appreciate the warm greetings which arrived from Jack and Elizabeth Barriger, Ethel and Phyllis Burckett, Phil and Edna Coffin, Bev Dudley '35, Everett Farmer '22 and Mrs. Farmer, Harry and Catharine Field, Sumner and Betty Hayward, Dug and Betty Jackson, Jack and Marge Kendall, Bruce Kingsbury '44, Pat and Pete Korn '56, Chick and Laura Kurth, Moose LeFevre, Milicent and Joe Maxfield '10, Bob and Helen Miller, Regina and Gus Munning '22, Helier and Graciela Rodriguez, Ray and Helen St. Laurent, Rufe and Madeline Shaw, Gretchen and Paul Smith '51, Helen and Lem Tremaine '23, Louise and Carlton Tucker '18, John Warren '46 and Mrs. Warren, Dave and India Woodbury.

Speaking of Dave Woodbury, the eminent writer, lecturer, explorer, inventor, and master of a dozen other fields has crashed through the sound barrier with his annual news letter. Writing from his west coast home at 1101 Roble Lane, Santa Barbara, Calif., Dave says: "In the course of wishing you a Merry Christmas, as you may be interested to know that I'm slated to become the father of a new book, *Around the World in Ninety Minutes*, on or about January 15, 1958. Yes, you guessed it, the subject is satellites. As with many earnest Americans, I suffered rather acutely from Sputnik. The little stranger caught me with page proof for the book just on the verge of the deadline to go to the printer with no more changes allowed. A frantic telephone conversation with my editor at Harcourt, Brace, brought on an even more frenzied re-entry into the book with blue pencil and eraser, sweeping away all the boasts and fatuously complacent statements about Vanguard. I also concocted a chapter on Sputnik, something no other book in the field has at present. All this in two days immediately following the launching of the little Russian propagandnik. What results will flow from this effort only the Russians can decide. The publisher thinks the book will 'do well,' but he doesn't say where.

"Was glad to be told by several bookstore executives that my book *Atoms for Peace*, though manifestly behind the times, is selling uproariously. What the public does is rush into a store and say:

'Give me a book about space, any book. As there aren't many genuine ones yet, the seller says: 'Well, perhaps this will do; it's about atoms. Doesn't that have something to do with space?' So the sale is made, and my royalty statement benefits from the deception. I anticipate an upsurge in science writing for the layman and am beginning to feel the pressure with two new articles germinating within *Reader's Digest* editorial minds and one other, which goes by the intriguing title of *Readin', Rockets and 'Rithmetic*, due to appear in the same magazine in February, colorfully illustrated. This one has a history. Wrote it and sold it to 'em in 1955, but they gave it back to me as too fantastic. Tried again a year later, with the same result. This fall, I shoved it at them a third time and history was with me, — they decided rockets were no longer a mysterious naughty word to the vast public. It's a humor piece, if you can imagine humor on this grizzly subject.

"Have done my usual spate of lecturing and the usual rockhound trips my wife and I take when there is a lull. We got some mighty nice moonstones at Patrick Point State Park in November. Would have found more, only I lost my glasses early in the hunt and had to search for the cursed things by feel. Have you ever felt of a two-mile beach with giant breakers roaring in on it from the Pacific?

"Son Pete, an ensign aboard the carrier *Franklin D. Roosevelt*, is functioning as a photographic intelligence officer, and will return in the spring for his marriage with Miss Barbara Allen of Chatham, Mass. Son Chris is rounding out three years of instructing in survival for the Air Force in Reno, Nev. His theatre of operations is the High Sierras, where the average snow cover is 20 feet and the temperature is 20 below. Sorry I won't be in Havana. Science writing isn't that profitable, but my heart will be with all of you Rockefelleres who do go." Thanks, Dave, and may your latest volume climb to the top of the best seller list. And please repeat the pleasant surprise of last year by dropping in to join the Class at Alumni Day next June 16 in Cambridge.

Father Time seems to be having an adverse effect on the continued recruiting of members for the Second Generation of 1921 at M.I.T. Club. Only one son and two nephews of members of the Class are currently at Technology as upperclassmen, and no new names appear in the listing of the freshmen who entered last fall. Lee B. Freese, son of Si Freese of Fort Worth, Texas, is in his senior year in Course I. Lee J. Alter '60, Course XV-B, is the nephew of Henry A. Alter; and Philip Fauchald '60, Course VI, is the nephew of the merry mariner, Sandy McMorran. Let us know if we have missed recording someone, especially in the Graduate School. For the record, 58 sons, one daughter, and four nephews of 49 members of the Class have attended Technology in the classes from 1942 through 1960. Whose grandson will be the first member of the club for the Third Generation of 1921 at M.I.T.?

Class Prexy Ray St. Laurent writes that he visited Dr. George Thomson, Assistant Director of Fabric Research Laboratories, Dedham, Mass., and just missed seeing

Dr. Walter J. Hamburger, Director. George's eldest daughter, Bonnie Jean, is married to a minister; his second daughter, Daryl, is in her third year at the Boston Conservatory of Music; and his son is in high school. Ray also sent a most interesting article from the December 23, 1957, issue of *Sports Illustrated*, entitled "Heaven for Honkers," illustrated with pictures of the activities of goose and duck hunters at the Whalehead Club on Currituck Sound in our old home state of North Carolina. Of particular interest is the photograph of a group of guests relaxing in the spacious living quarters after a successful day in the sand dune blinds. Who should be in the forefront of this distinguished group but our own Munnies Hawes of Sea Girt, N. J.

The coming 10th annual fiesta of the M.I.T. Club of Mexico on March 13, 14, and 15, brings to mind the lengthy article in Spanish which Clarence M. Cornish '24 of the Club kindly sent in to advise the most recent honor received by Dr. Manuel Sandoval Vallarta. Thanks to the translation made by our daughter, Eleanor, the article quotes the distinguished cosmic ray scientist of the laboratory in Ciudad Universitaria on the program of study which is being undertaken during the International Geophysical Year that extends to next December 31. The Undersecretary of Education of Mexico and a delegate to the Inter-American Committee on Cosmic Rays, Val was honored at the meeting in La Paz, Bolivia, with the designation as honorary professor of the Universidad Mayor de San Andrés which maintains a cosmic ray laboratory at a 5,200 meter altitude and co-ordinates its work with M.I.T. as well as with UNESCO and the Center of Physical Investigation, Rio de Janeiro.

The annual letter from the Alumni Association, in the form of a serious message from President Gil Roddy '31 on the position and destiny of M.I.T. when our country's scientific leadership is being challenged, also encloses a folder entitled "M.I.T. Alumni Make News." Naturally out in front when it comes to making real news, the Class of 1921 is represented by seven items, ranging from the newest Sheraton Hotel built in Philadelphia by Ernie Henderson and Bob Moore to Dave Woodbury's popular book on computers and the like, entitled *Let Erma Do It*. In between, Admiral Joe Fowler builds and stays to manage Disneyland; Dana Huntington achieves the presidency of the Dennison Manufacturing Company; Admiral Andy McKee wins the David W. Taylor Medal; and Dr. Walt Hamburger is honored with the Olney Medal. Thanks, Gil, for all the publicity!

Promotion to brigadier general from colonel has come to T. Dodson Stamps, long a member of the faculty at West Point and now assigned to duty in Washington, D. C. Walter A. McKim advises that he has moved from Louisville to Anchorage, Ky., where his home address is 131 Chadwick Road. Joseph G. Kaufman writes that he was just looking for a warmer climate in making the move from Boston to Daytona Beach, Fla. Commenting on his move to another home address in White Plains, N. Y., Joseph C. Morrell says: "Am still in the appraisal and real

estate consulting profession here in Westchester County. Change of address due only to what seems prudent — to exchange the chores of house maintenance for the freedom of 'cliff dwelling,' where others climb the ladders and shovel the snow. With reluctance, the garden and flowers were relinquished; but there is satisfaction in having more leisure time for less strenuous hobbies."

Richard H. Morris of the Technical Publishing Company, Barrington, Ill., says he talked to some 5,000 people in at least 50 different classifications, such as universities and engineering associations, during a two-month business trip to the U.S.S.R., Poland, Yugoslavia, and Czechoslovakia. He comments: "In spite of the sputniks, it is a sad country." Dick was in Europe for a total of six months. Raphael VanNeste writes that he is construction management engineer with Public Housing Administration, Washington, D. C.

Rollin Francis Officer died on March 25, 1957, at the Veterans Administration Hospital in Albuquerque, N. M. Cap had been in ill health for some time. He had lived in Washington, D. C., where he was chief of the contract section, Engineering Division of the Reconstruction Finance Corporation. Born on June 13, 1898, at Salt Lake City, Utah, he prepared for Technology at Exeter. At the Institute, he was enrolled in Course XV and was active in many organizations including Delta Upsilon, Osiris, Beaver, Varsity Club, Mechanical Engineering Society, Corporation XV, Aero Engineering Society, the Hockey Team and its manager, Inter-Fraternity Council, Advisory Council on Athletics. He was president of the Class of 1921 in our sophomore year, president of the M.I.T. Athletic Association, and a member of the Institute Committee in each of his four years. During World War I, he attended officer training camps at Plattsburg, N. Y., and Camp Taylor, Ky., and became a second lieutenant in the Field Artillery. He is survived by a brother, Daniell N. Officer '24, to whom we express sincere sympathy on behalf of the entire Class.

Now that spring is just around the corner, drop a line about yourself to your Secretaries before you get too busy with the golf clubs or the fishing tackle or the garden tools. We would certainly like to hear from you, and so would the rest of the Class. — CAROLE A. CLARKE, Secretary, Components Division, International Telephone and Telegraph Corporation, 100 Kingsland Road, Clifton, N. J. EDWIN T. STEFFIAN, Assistant Secretary and Chairman, Havana Reunion Committee, 11 Beacon Street, Boston 8, Mass.

1922

Your Secretary is now putting away Christmas cards from many members of the Class and takes special note of a beautiful snow scene photographed by Fay and Judy Lincoln. This is a good season, also, to compliment Parke Appel on his urgent request and ambitious program starting now toward the Alumni Fund gift at our 40th Reunion. It is surprising how easy and painless a good-sized contribution can be when spread over this five-year period. Plenty of blanks are available

for your signature with lots of room beyond the dollar sign for filling in the amount. Many of the Class will get together on February 6 at the big Technical Dinner Meeting of the New York M.I.T. Club to be held in the grand ballroom of the Biltmore Hotel on the subject "Industry's Stake in Atomic Energy."

Clate Grover, President of Whitehead Metal Products Co., writes that he hopes to be in Buffalo soon. How about other members calling me at CI-2010 when in this area? Frank Kurtz writes that he joined Sam Reynolds at lunch recently at the New York Club. Frank and Mrs. Kurtz also met Ted and Mary Riegel at Delray, Fla., in November. Crawford H. Greenewalt, President of the Du Pont Co., was awarded the William Proctor Prize for Scientific Achievement, one of the country's highest scientific honors. He made the joint annual address of the Society of the Sigma Xi and the Scientific Research Society of America at the annual meeting of the American Association for the Advancement of Science in Indianapolis. "The impact of the Soviet achievement has been startling and may well prove far-reaching," he said. It has already put impetus behind a national program of scientific education, alerted the country to the need of adequate technology, and has shown the dangers of overconfidence, he pointed out. Dr. Clifford Banta, a specialist in the field of petroleum chemistry, has announced retirement from the Du Pont Co. He received his Ph.D. degree from M.I.T. in 1922. He lives at 640 Parrish Road, Swarthmore, Pa.

Colonel Clinton B. F. Brill of the New York engineering firm of DeLeuw, Cather, and Brill has been named chairman of the New York State Thruway Authority by Governor Harriman. In World War II he was a colonel of engineers serving with the Ninth Army in European operations. He is one of the designers and constructors of New York International Airport. Governor Harriman said that Mr. Brill has agreed, in addition, to act as assistant to the Governor in connection with the state's construction program, including buildings for state institutions, as well as highways. In this he will work closely with Superintendent of Public Works John W. Johnson and Director of the Budget Clark D. Ahlberg. Mr. Brill will adjust his personal and business affairs so as to take office early in 1958.

Edward C. Fales has been listed as the new president of Gunite Foundries Corp. of Rockford, Ill. Edward was with us at a recent meeting in Cambridge. Harvey L. Williams is announced as the new president of Philco International Corp. Henry (Stew) Dimmick of Philadelphia phoned while passing through Buffalo last week. He is now ambassador-at-large for SKF Industries, calling on paper mills. His expert advice is most appreciated and he will be happy to give it, especially to those in our Class who are interested. Stanley W. Turner's new address is Mutual Benefit Life Insurance Co., 40 Central Street, Boston 9, Mass. New address of Werner Schoop is Flexflam A.G., Topferstrasse 26, Zurich, Switzerland. We are sorry to report the passing of Colonel Russell Robb of Concord, Mass.; our sympathy goes to his family.

It is not too early to make your reservations for Alumni Day early in June. The usual fine '22 gathering is expected. This time bring your wives. — WHITWORTH FERGUSON, *Secretary*, 333 Ellicott Street, Buffalo 3, N. Y. C. GEORGE DANDROW, *Assistant Secretary*, Johns-Manville Corporation, 22 East 40th Street, New York 16, N. Y.

1923

Various members upheld the rating of the Class in a recent issue of "M.I.T. Alumni Make News." Among those who were honored during 1957 were three new presidents, Robert J. Hull, XV, of the Cities Service Oil Co., Ltd., Toronto, Canada; Jerome A. Watrous, XI, of the Northampton Cutlery Co., Northampton, Mass.; and William Webster, XIII, of the Yankee Atomic Electric Co., Boston, Mass. Paul Heymans, VIII, former Belgian minister of various sorts (economic affairs, agriculture, middle classes), has held many posts and honors. Among the current ones, chairman of the Belgian League of Large Families. Julius A. Stratton, VI, received the 1957 Medal of Honor, Institute of Radio Engineers. Kent T. Healy, VI, is the new director of Social Sciences at Yale; Colonel Fred Lindtner, VI, is Commander of the Otis Air Force Base on Cape Cod. John E. Burchard, IV, Dean of Humanities, served as president of the American Academy of Arts and Sciences. If we have missed any, please send in the notices and we'll extend our congratulations in the next issue. Congratulations to all of you mentioned above! We are very proud of you!

Robert C. Sprague, XIII, Chairman and Treasurer of the Sprague Electric Company at North Adams, Mass., has been re-elected chairman of the Federal Reserve Bank of Boston. Robert L. Hershey, X, General Manager of Du Pont's Polychemicals Department, was elected a director, vice-president, and a member of the Executive Committee of the Du Pont Company. William L. Stewart, Jr., XV, was elected chairman of the Collier Carbon and Chemical Corporation, a subsidiary of the Union Oil Company of California. William Webster, XIII, President of the Yankee Atomic Electric Company, assures New Englanders that they will get atomic power sometime in 1960. Congratulations to these men, also!

Walter Dietz, VIII, has retired as president of the Electrolux Corp., but remains as a consultant and a member of the Board. James K. Clapp, VI, has retired and is planning to spend his winters in Florida and his summers at Lake Winnebago, N. H. There's a man who has the right ideas!

A letter from Dr. Malhotra Des Raj, X, from Bombay, India, states that he would like to attend the reunion but restrictions on foreign exchange prevent his doing so. He sends greetings to the Class and reports he is the father of eight children but few grandchildren. Can any of you beat the record of Stearns Whitney, II, of Elmsford, N. Y., who has seven children and 15 grandchildren — all living!

Herb Hayden, II, has charge of all class pictures, movies, stills, transparencies, and about everything else. If any of you have

any such records of class activities during our stay at the Institute or since graduation, will you please send them to Herb for the Class Library. He would like to have them as promptly as possible to allow ample time for editing, mounting, and so forth, so that they will be ready for showing at our 35th Reunion, June 16. Send them to his home — Box 86, Main Street, Lancaster, Mass. — or in care of E. I. du Pont de Nemours and Co. (Doyle Works), Leominster, Mass.

REMEMBER OUR 35TH IS SCHEDULED FOR THE PINES, COTUIT, MASS., JUNE 13 TO 15, 1958. Penn Howland and his various committees are doing a splendid job, and a wonderful time is assured. Your participation and attendance will be all the encouragement he needs and will be among the highlights of your illustrious careers. — HOWARD F. RUSSELL, *Secretary*, Improved Risk Mutuals, 15 North Broadway, White Plains, N. Y. WENTWORTH T. HOWLAND, *Assistant Secretary*, 1771 Washington Street, Auburndale 66, Mass.

1924

A very interesting and lengthy piece in the Pittsburgh *Post-Gazette* headed "Vital Civic and Business Executive" gives the low-down on Edward James Hanley, President of Allegheny Ludlum Steel. That's only one of Ed's jobs. He's also president of the Pittsburgh United Fund, director of eight companies, and active participant in more than 20 organizations. Included in the latter are the M.I.T. Corporation and the Department of Metallurgy Visiting Committee. When Ed gets his annual report cleaned up, about February, he and Dolly head off on vacation. This year it's Hawaii.

Which brings us by logical steps to the MacCallums, who are just back from Hawaii. From Bill's standpoint, there aren't many real vacation spots left. He hits most of the U. S. on his regular travels. Last year he and Eleanor went to Baja, Calif., which probably is a poor market for movie exploitation. This year they spent Christmas in the Islands, which should have a good potential.

Christmas, by the way, brought a welcome shower of cards. All were greatly appreciated, especially those with a bit of grist for these columns. The Charles H. Blakes had a photograph of their new North Carolina retirement home, a very charming spot which was formerly either a tavern or a poorhouse, we forget. From the Cornishes, a card in Spanish (which we haven't had translated by Lobbie yet), with a little Mexican girl about to break a Christmas pinata. If you've never done this, it's quite a sport. Nish will have the usual big beaver pinata at the Fiesta, March 13 to 15. Hope some of you are there to take a lusty swing for '24. Not very Havana-ish was the Grandma Moses snow scene from Hortensia y Miguel Amezaga. Maybe it's indicative of a certain nostalgia on Mike's part for a bit of New England winter. As these lines are written it's a gorgeous mild mid-January day, something to really get homesick about. So tomorrow there will probably be a blizzard!

Nevin News Flashes brought us up to date on the year's happenings to Jack and

Gerry and their tribe, increased last year by one grandson. Professor and Mrs. Edward S. Taylor (we have so many Taylors that it needed the full treatment for identification purposes) did the same sort of thing, only pictorially. A flock of assorted birds brought the family history up to date, again including a grandchild. Particularly enough, the Cardinals could do no better themselves last year — only one new addition to report. The other outstanding event recorded on their card was the fact that Paul "conquered Grand Canyon on a mule."

Phil Bates's card featured, as usual, a photo taken along the California coast. He may be a Native Son now, but at least he sends his family back home to be educated. One son got his Ph.D. from the Institute last year, another is now a junior here. To all the rest of you who sent cards, many thanks.

One of Jerry Schooler's jobs as assistant to the president evidently is being the president's secretary at these New York Club '24 luncheons. Although Nate was there in December, it was Jerry who sent in the dope. There were 12 present including, as is apt to be the case at any '24 meeting anywhere, Bill MacCallum. President Littlefield had to miss it, and V. P. Cardinal was in a merry round of meetings — salesmen, governors, all sorts. Here's the lineup: Messrs. Al Anderson, Howell Brown, Sox Kinsey, Elko Honigman, Frank Manley, Lou Porter, Greg Shea, Henry Tanck, Ed Wininger, and the Schoolers and the MacCallums.

News comes from Phelps Dodge that they have a new Executive V.P. in the person of Edgar P. Dunlaevy. Ed has been an ordinary V.P. for some time — or rather, knowing Ed, probably far from ordinary. Recent issue of *American Exporter Industrial* had a Special Report on "Hardness Tests Help Control Quality." Authored, of course, by our top hardness man, Vin Lysaght. Don't know that we've given you his full title before. It's general sales manager, Wilson Mechanical Instrument Division, American Chain and Cable Co. Vin has spent many years developing equipment and techniques. Now they've put him in charge of selling his own developments. He should certainly know all the answers.

Sorry to have to report three deaths this month. Actually one occurred two years ago, but we just got the word. Commander Robert B. Pick, U. S. Navy, graduate student in the Navy program, died in 1955. The other two will be known to many of you. Both were Course VI men. Lawrence Novack died in October. He lived in Newton Center and had been with New England Telephone and Telegraph since graduation, in late years as a division engineer. William J. Limpery '25 joined New York's Department of Public Works after graduation, had made the switch to being a civil engineer. He died in mid-January.

Not a very happy note on which to end a column. Maybe next month we can tell you about your classmates who are vacationing in Puerto Rico or Acapulco or sailing the Caribbean. If you're one of those, do drop a line to — HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

News of activities of 1925 men is at a low ebb this month; and it appears that the Secretary must request that you either drop him a note or get yourselves mentioned in the newspapers.

Henry Sachs dropped me a line to announce the merger of the firms of Kalvin, Meyer, and Sachs and Henry Miller and Son, resulting in the formation of a new firm of Kalvin, Miller, Meyer, and Sachs, with new offices at 41 East 42nd Street, New York 17, N. Y. The next time you are in New York, I am sure Henry would like to hear from you.

During the past November, Ralph F. Gow, Course XV, Executive Vice-president of the Norton Company in Worcester, Mass., was elected a trustee of Norwich University. To refresh your memory, Ralph joined the Norton Company upon his graduation and became executive vice-president of the company in 1948. During World War II, he served in the office of the Undersecretary of War as chief of Industrial Services and was awarded the Distinguished Service Medal.

Among the address changes received during the past month are several which indicate area moves, including the following: Major General John H. Stokes, Jr., Course II, has moved from Fort Myer, Va., to the San Francisco area. Philip E. Gruber, Course X-B, was transferred from Arlington, Va., to Kansas City, Kansas; and Harold E. Davis, Course I, from Ridgeway, Pa., to Merrill, Wis. — F. L. FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge 39, Mass.

1926

The first thing to drop from the clippings envelope this month was a news release. It is of sufficient interest and importance to quote in its entirety. "Raymond Mancha, ventilation vice-president with Joy Manufacturing Company for the past 12 years, is retiring from active business effective December 31, 1957, to provide time for pursuit of personal interests and study, including work on advanced concepts of mine and industrial ventilation principles. Most of Mr. Mancha's business life since graduation from M.I.T. in 1926 has centered around the ventilating field. He is a recognized authority, particularly on mine ventilation, and has been a prolific contributor to the literature of the field in the form of technical society transactions and trade journal articles. His resignation fulfills a long cherished plan to retire from active business at the age of 55." I am sure Ray's move will become the envy of many classmates. However, knowing Ray as I do, I would have worded the release a little differently: i.e., "Ray Mancha is leaving active business for active retirement." And you can depend upon that!

Do you remember Ed Dingley? I am sure many of you do, but it's been a long time since we have heard from him; and now he shows up in St. Pete, Florida. A news release plus a post card from Ed brings us up to date on him, so we will quote from the release. "Edward N. Dingley, Jr., staff research engineer, Electronic Communications, Inc., St. Petersburg,

Fla., has been elevated to the honorary grade of fellow by the American Institute of Electrical Engineers 'in recognition of his many contributions in the field of electrical engineering to the defense of the United States,' it was announced today. Captain Dingley (U. S. Naval Reserve, inactive) served on active duty during World War II in the Bureau of Ships, Navy Department, San Diego, Calif. He was engaged in electronic research and development for the federal government for more than 27 years prior to his retirement in July, 1957. In 1956 he was awarded the Department of Defense distinguished civilian service medal 'in recognition of ingenious solutions to complex communications problems of the National Security Agency.' This medal is the highest award conferred on civilians by the Department of Defense." It's quite a deal when a classmate hides out for all these years and suddenly turns up with a record like this. We were certainly happy to hear from Ed and are proud to present his record in the notes.

Dave Harrison keeps us informed annually with an accordion Christmas card, five folders of family: five for the daughters and one for Dave and his wife who, as we have reported, are now living in Birmingham, Mich.

I must pause a moment and take a look at the spectacle of the sea — it is ever-changing, and this morning the picture we see is most unusual. It is clear and cold, 10° F., and the sea being so much warmer is literally boiling off a light, fluffy mist that is being blown across the bay like down. I believe the accepted name for this phenomenon is "Arctic Smoke," and we are seldom here for the right conditions to see it. When we arrive at Pigeon Cove on Friday evenings the first move, after turning up the thermostat, is to hop in the car and go visiting to pick up the news of the week. The big news this week was the wind. I had been grounded at La Guardia on Tuesday afternoon and came back to Boston by train, dug the Volkswagen out of a snowbank at the airport, and proceeded home without incident. However, just 40 miles northeast, here at Pigeon Cove and Rockport, the wind was blowing at hurricane velocity. Several friends recorded 70 to 80 miles per hour on their anemometers, as high as the two New England hurricanes. It picked up a small sailboat stored on the yacht club dock and tossed it upon the rocks, blew off doors, skylights, and so forth; but fortunately there was no major damage. But let's get back to the notes, or we will never finish.

Here's a clipping telling of Bob Dawes' election to the presidency of the Central Massachusetts M.I.T. Club at Worcester. Bob, General to most of us, is now president of the Thomas Taylor Co. of Hudson, Mass., who over the years have supplied the class of '26 with flexible belts, garters, and so forth, at reunions. We know that this M.I.T. club will flourish under Bob's direction. And, oh yes, Drape has another medal! Quoting from *Aeronautical Engineering Review*, "Charles S. Draper, head, Aeronautical Engineering Department, Massachusetts Institute of Technology, and director, Instrumentation Laboratory, has been awarded the American Society

of Mechanical Engineers Holley Medal. Given for a 'great and unique act of engineering genius,' Dr. Draper received the award for discovery of a revolutionary new principle for controlling guns fired from moving platforms at moving targets." Congratulations again, and where do you keep all of these medals? Drape not only is without question our most bemedaled classmate — I'm sure he takes the honor for all Alumni.

Argo Landau was here a couple of years ago and at the time was suffering from a bad back. Wondering about the outcome, we recently dropped him a note to find that he has been mended back to normal health again. Let's quote a couple of paragraphs from Argo's letter, which is on his company stationery, Royal Bond, Inc., of St. Louis: "Also since I saw you last, we completed our new house in the country, remodeled it quite a bit, and planted bushes, trees and so forth. About the only sorrowful feature of our life just at the minute is our little Dachshund, who has now been with us for over 14 years and who is gradually running out of steam. He has heart trouble and every night we feed him pills, which seem to keep him going; but for how long, it is hard to say. Heidi must be big as a bear by now. I wish I could see her. I have no trips East in prospect for the near or even distant future. However, I certainly hope I will be able to get to New England for another visit before too many years have passed. Sincerely, Argo E. Landau." That just about finishes the class notes for March; and if preliminary plans develop, Ruth and I will be in Mexico attending the 10th annual Fiesta of the M.I.T. Club of Mexico City, which is to be held March 13, 14, and 15. That will also mean that the class notes for May will have to be written south of the border. You will recall that classmate B. V. Howe of Denver has been proposing a '26 reunion in Mexico for several years. If we get down there, I will certainly check and try to find the basis of his idea. — GEORGE WARREN SMITH, *General Secretary*, c/o E. I. du Pont de Nemours and Co., Inc., Room 325, 140 Federal Street, Boston 10, Mass.

1927

Elmer Andrews, plant engineer, has been named manager of building services for Eastman Kodak Company. He will be responsible for matters concerning the operation of Kodak office buildings and physical facilities, including the maintenance department and staff functions, such as safety and civil defense.

Dr. William F. Cheney, Jr., chairman of the Mathematics Department of Hillyer College, addressed the Kiwanis Club recently on "Beyond the Milky Way and Sputnik." Dr. Cheney has contributed articles to the *Mathematics Monthly* magazine and is known as a professional magician.

Among those who presented papers at the Fall General Meeting of the American Institute of Electrical Engineers was Howard A. Chinn, whose paper was entitled "Status Report on Video Tape Applications in Broadcasting."

The Cornell-Liberty Safety Car which was unveiled last year is theoretically the

safest automobile ever built—able to withstand a fifty-mile-an-hour crash into a stone wall with no harm to occupants. The well padded car was developed after five years of automotive safety research carried out at Cornell University's Aeronautical Laboratory under sponsorship of Liberty Mutual Insurance Company. Frank (Deke) Crandell is chief engineer for Liberty and worked on this project.

Major General Frederic E. Glantzberg's new address is M.A.T.S. Headquarters, 6-9th Street, Scott Air Force Base, Ill., where he will be vice-commander.

Kenneth A. Smith of Darien, Conn., has been appointed assistant dean of the School of Architecture at Columbia University. He will assist Dean Arnaud in the administration of the school.

"A former Campello man who a year ago rose to be president of a national concern that does a greater than 50-million-dollar-a-year business was re-elected to that office at the company's annual meeting in New York on October 25, 1957, after an excellent year of earnings and record sales and acceleration of an expansion program." He is Frank C. Staples and the company is the American Molasses Co. in New York City.

Gjon Mili who came to M.I.T. 35 years ago as a student speaking broken English returned in January as a world-famous photographer. The first one-man exhibit of his pictures was shown at the Hayden Memorial Library January 8 to 26. Mili began work with Dr. Harold E. Edgerton's equipment by making pictures of the Duncan Dancers—pictures which stopped their action in mid-air and revealed for the first time elusive elements of movement which the human eye is too slow to see. In 1938 *Life* magazine used his action pictures of Bobby Riggs, the tennis star—the first pictures of the kind that had ever been used. Since that time the stroboscope has been simplified and has been adopted by most professional photographers; but Mili is still regarded as the outstanding stroboscopic photographer—especially in the multiple flash technique, by which a whole series of movements is recorded on one film.

"The man this country relies on, as much as any other, to match the Russian inter-continental ballistic missile is a little-known, Belgian-born aircraft engineer—Karel Jan (Charlie) Bossart. For Bossart, development of an I.C.B.M. is no new thing. He has worked on it since World War II. Officially, he is assistant chief engineer of the Convair Division of General Dynamics. Among missile men he is known as 'Mr. Atlas,' since he gave Atlas its name."—J. S. HARRIS, *Secretary*, Shell Oil Company, 50 West 50th Street, New York 20, N. Y.

1928

The class news folder is really bulging this month. This is due, in some degree at least, to an upsurge of class interest as our 30th approaches. (Have we heard from you?)

Newton Foster reports briefly on his entire family as follows: Newt is project administrator at Congoleum-Nairn, Inc., Kearny, N. J.; son Newton, Jr., is a mechanical engineer, graduated from Uni-

versity of Vermont; son James Alexander is a freshman at Allegheny College, Meadville, Pa.; and Newt's wife Olive is director of Public Relations at Fairleigh Dickinson Junior College in their home town, Rutherford, N. J.

Dexter Dimock writes: "Sorry I missed the 25th. This sounds like a wonderful spot for the 30th, and we will surely try to be there. Have a 25th wedding anniversary coming up this year, and I sure feel old. I see A. A. Archibald and Don Fraser frequently—maybe we can talk up a Pittsburgh contingent."

Don Fraser also sent in his reservation return card, so the "Pittsburgh contingent" seems to be forming in earnest. The Frasers may decide to bring along son Malcolm (M.I.T. '60) and daughter Suzanne, who is now eight.

From Maxwell Parshall: "Am teaching part time in the Civil Engineering Department here at Colorado State University. The remainder of the time for the past six months has been spent in helping to design and operate equipment for precise calibration of flowmeters. This work has been very interesting. Our home is very musical with wife Mary teaching piano and daughter Marie a sophomore music major at C.S.U."

John B. Russell sent his regrets—he will be unable to attend the reunion. However, he did send this note: "Since January 1, 1957, I have been manager of the Electronics Laboratory, General Electric Co., Electronics Park, Syracuse, N. Y. I have been elected fellow of the I.R.E., effective January 1, 1958. I've been doing quite a bit of speechmaking lately and gave the principal address to an alumni meeting of Boston Technical High School (Mechanic Arts High School) in Boston on October 25. My daughter Carolyn is 21 this month and is a junior at Cornell—she is majoring in animal husbandry."

Ben Hough, who was toastmaster at the banquet during our 25th, wrote Ralph Jope as follows: "It is not yet clear whether I can attend our 30th reunion, but if arrangements can possibly be made, I'll be there. By way of news, I can report that although I am located only about 30 miles from Corning, N. Y., and have been there many times in the past 20 years, I just learned within the past few days that Tom Wood is located there and is well up the ladder in the Corning Glass Company. In fact, he and I sat through one entire meeting before mutual recognition occurred. Small world. It may also be newsworthy that I finally managed to complete a textbook in my special field of soils engineering. A publication notice and a review which appeared in the British magazine *Roads and Road Construction* are enclosed as evidence in support of this claim. Last summer I was able to take my wife and youngest daughter to Europe, the trip being chiefly for the purpose of attending a meeting of the International Society of Soil Mechanics and Foundation Engineering in London. In addition to seeing a little something of England, we managed to get in a trip to France, where we visited friends in Brittany. See you this summer, I hope."

Bob Larson sent in his reservation card with this note to our Treasurer: "Dear

Jim, I am very happy to submit this token of intent. I hope conditions will permit us to attend the reunion. Kathleen thinks those of the Class she has met are quite exceptional..."

Gil Toone wrote a very fine review of his activities and we give you his own words. "... I always turn to '28 notes first when I get *The Review* and enjoy them very much; but I admit I haven't done my part in helping to fill the columns. You already know most of my history since graduation. Five years of graduate work in Course V; then joining National Aniline Division of Allied Chemical and Dye Corp., where I have been for nearly 25 years. I round out the 25 years next September. 14 years were spent at the Buffalo plant, where I am located now. However, I did a stretch of 11 years in the New York City area for the company between 1944 and 1955. I spent 22 years in the detergent field, and am now assigned to diisocyanate (urethan) application. Incidentally, these are very interesting polymers. I should mention my entire career has been in research. Presently, my position is that of group leader.

"That should take care of professional history. On the non-chemical side, I am married (since 1935) and have two boys, 15 years and 7 years. The older is headed for a science career of some sort. As a family we think Hamburg (outside of Buffalo) is the only place in the U. S. A. worth living in, in spite of minor disturbances such as three feet of snow in 32 hours just before Thanksgiving..."

From René Simard a fine newsy letter to Jim Donovan: "I've just sealed the envelope with my \$5.00 check for the 30th reunion, and I suddenly remembered the request for personal notes on the back of the card. Now this is the second request, since Walt Smith also asked in his very pleasing little note for my birthday; and I can't be so darn lazy any longer after all that. By the way, this is the first time this birthday greeting has happened to me. Could it be due to the importance of the number of years, you busy record hounds?!"

"I don't know how far back I should go on this story of my recent activities, but I guess I can assume that June, 1953, would be a good starting point, since it is the date of my last contact with you and the other classmates who attended the 25th reunion. At that time the Imperial Oil had moved me from the Montreal refinery to the Engineering Division at Sarnia, where I had been group leader in charge of catalytic cracking design work for our light refineries, not counting our baby at Norman Wells near the Arctic Circle.

"In the fall of that same year I was asked if I wanted to spend six months in Southern France as technical advisor to a French refinery about to start up a new cat. cracker designed by our parent company, Shell Oil of New Jersey. Of course I accepted, on condition that they pay my wife's passage. I know my French pretty well and was sure they'd get the point, which they did.

"We sailed away first class on the S. S. *United States* and had ourselves a very pleasant six months with lots of traveling over the week ends and a 4-day 'excur-

sion' to Casablanca, Marakkesh, and Rabat. We darn near froze to death in very poorly heated quarters during one of their coldest winters, but it was still worth it.

"At the end of my six months I took my three weeks' holidays over there, touring through Belgium, Holland, up the Rhine valley to Basel, through Switzerland, and down Italy to Rome, where we saw the Pope on Easter Sunday, when he made his first public appearance after his long illness. From there to Naples, Vesuvius, Capri, Sorrento, the Amalfi drive, and back up to Florence, Venice, Milan, Genoa, the Italian and French Rivières, up to Geneva, and then back to Paris. This whole trip was made with my two oldest boys, who flew over alone from Montreal to London, where we met them, although they were only 12 and 6 years old then.

"We came back in the spring of 1954, and I went to work as head of the central cracking group to handle operating problems of catalytic crackers. This lasted until January of 1956, when I was promoted to chief process engineer, which incidentally rates a carpeted office with soft-seated chair. I've had the job for two years now and enjoy it very much, although there are the usual headaches which go with added responsibilities.

"For holidays I've made some pretty nice trips, such as driving out west to Grand Canyon and Las Vegas, returning via Yellowstone Park; then in the fall of 1956 a tour around Bermuda, Jamaica, Haiti, and Cuba; and finally a trip to Hawaii this last October.

"My family consists of three boys — 16, 9, and 6 — and a cute little girl almost 2 years old — and is she ever spoiled by her brothers, not to mention her old man! I guess that covers it pretty well for now — things are quiet for a while, no trips away from the North American continent are foreseen at this time! With best regards and good wishes for the New Year. Be seeing you in June."

Charles Richheimer also sent in a letter: "Dear Jim: I certainly would enjoy coming to the 30th anniversary party of our Class; but I expect to be traveling with my wife and daughter this summer, and our tentative itinerary places us quite a distance from Boston in early June. Remembering the marvelous time my family and I had at the 20th reunion and knowing the grand job that all the boys did then, I am enclosing my check to assist the reunion preparations, and I shall be there at least in spirit.

"Outside of repugnance relative to the recent spell of New England weather which came to Florida this past week, I have nothing very bad to report; and we did manage to live through some freezing weather, so you need waste no sympathy on us. As you personally know, my activities center around consulting engineering in the water and sewage fields as a partner in Reynolds, Smith, and Hills, architects and engineers of Jacksonville. With Florida's rapid expansion we are still very busy, and I hope this happy situation continues.

"Please issue an open invitation to all my classmates to stop in and see me when they are in this area, and tell them that I am a very smug, satisfied Florida

"cracker," and unless forced to do so, rarely go north beyond the Georgia State line. My family joins me in our best to you and yours. Sincerely, Charles."

From a News Service release of the American Chemical Society dated December 16, 1957, we learn: "Howard R. Batchelder of the Battelle Memorial Institute, Columbus, Ohio, has been elected chairman of the American Chemical Society's Division of Gas and Fuel Chemistry for 1958.

"Mr. Batchelder, whose research interests include chemical studies of synthetic fuels, gasolines, and diesel oils, was born at Swampscott, Mass., in 1906. He received the S.B. degree in 1928 and the S.M. in 1930 from the Massachusetts Institute of Technology. He was a research chemist with the Standard Oil Company of Indiana from 1930 to 1937, assistant manager in the development laboratory of the United Gas Improvement Company, Philadelphia, from 1937 to 1945, and chief chemical engineer of the Ugit Sales Corporation and Pennsylvania Industrial Chemical Corporation for one year, from 1945 to 1946.

"The new chairman was associated with the Institute of Gas Technology from 1946 to 1948, first as technical assistant to the director and later as technical director of the institute. He was a chemical engineer at the coal-to-oil demonstration branch, Office of Synthetic Liquid Fuels of the U. S. Bureau of Mines, from 1948 until 1953, when he left to become associate consulting chemist at Battelle.

Mr. Batchelder is a member of the American Institute of Chemical Engineers and the American Gas Association, in addition to the American Chemical Society.

A news clipping from the *Berkshire Eagle*, Pittsfield, Mass., of November 22, 1957, announces that the N. R. Herbits Agency in Pittsfield has been appointed district manager for Berkshire County by the Manhattan Life Insurance Company. This is Nathaniel Herbits' agency. He graduated from Course XV-2 and then studied law at Harvard and Boston University.

Also from western Massachusetts Roger Jewett, XV, writes that his address is now Hopper Road, Williamstown, Mass. He is now executive director of Northern Berkshire Development Corp. in North Adams, Mass.

Milton Thompson, who won his M. D. at Harvard, after studying at the Institute for requisite credits, has specialized in orthopedics and has been with the U. S. Army since the war. He now has this bit of news about himself: "I am retiring from the Army next summer and don't yet know what I shall be doing. I have had two unsolicited offers from universities — one wants a full-time professor of orthopedic surgery and one wants a part-time professor of forensic orthopedic surgery. Both sound tempting."

We regret to report the death of James M. Kay, Course VI. James died December 2, 1957, at a Newark, N. J., hospital, after a short illness. — GEORGE I. CHATFIELD, Secretary, 11 Winfield Avenue, Harrison, N. Y. — WALTER J. SMITH, Assistant Secretary, 15 Acorn Park, Cambridge, Massachusetts.

1929

We still are screaming for material to include in these notes. Again, I urge all of you to write me telling me what you have been doing, whom you have seen, and what they have been doing.

Brig Allen has brought up a question on the location for the 30th reunion, which, believe it or not, is only a year away. Recent classes have seemed to favor the North Shore, although both the North Shore and the South Shore are still popular. Let either Brig or myself know your thoughts on preference as to North or South Shore; and any suggestions which you have for an exact location will be helpful.

Brig is working on plans for a committee being set up very shortly now, and the advance publicity will start within the next few months.

Not much individual news this month. Frank Mead reports being all over the country: Florida and California. He spends much of his vacations in hunting and fishing. Bill Baumrucker has made a transfer, to my amazement a year and a half ago, and is now general manager of Photon Company here in Cambridge. He reports working hard and enjoying life. Gordon Williams, who is here at Tech, reports having spent a summer in El Salvador and a couple of trips (vacations) to Cuba.

John Wilson took his family over to Nassau from Miami during the Christmas holidays. He claims lovely weather in Nassau but had a rough trip from Miami to Nassau.

News is hard to come by. Shoot it to me, boys. — FISHER HILLS, Assistant Secretary, Dewey and Almy Chemical Co., 62 Whittemore Avenue, Cambridge 40, Mass.

1930

Though we don't have much news to report this month, it is encouraging to note that there is always some response to the inquiry cards we send to a randomly picked group of classmates each month, enabling us to "hit" the class notes column of *The Review* more or less regularly.

Bill Dickerman, Jr., is just back from another trip to London, where he spent the entire month of November.

The year 1957 was a busy one for Dutch Hamilton. He made two trips to the West Indies and one to Hawaii. Dutch says he hasn't learned to do the hula yet. He is still in the import-export business and is starting his 12th year in New York.

Bryant Kenney writes that he is still going through the motions of working. About eight months ago he ran into Perm Limpisvasti at the Airport in Bangkok, Thailand. Perm, who is a general in the Thai Air Force, was interested in hearing about our reunion in 1955 and wanted to be remembered to his classmates.

Joe Preble resigned from Congoleum several months ago and has relocated as chief of Standards Department with Hendrick Manufacturing Company. He has two married daughters, one in Caracas, Venezuela, where her husband is in the insurance business, and a younger daughter who is about to go to the Marine Base at

Pendleton, Calif., with her husband and Joe's first grandchild. Joe writes that he has been in touch with our classmate, Carl Franz, who is still with General Chemical — now in Morristown Laboratory — and who lives in Mendham, N. J. Carl's son, Eric, entered Bucknell last fall (1957).

Mrs. Angelo Ricciardelli has answered our inquiry card for her husband. She writes that he is a colonel in the U. S. Army, heading the Army Unit of Joint Spectrum Evaluation Group under the Joint Chiefs of Staff at the Pentagon, Washington, D. C. He served in the Pacific Theatre in World War II and, since the War, in Hawaii, Japan, and U. S. posts. In 1943 he was married to the former Jane Vicroy of Honolulu. They now have five children.

We received an interesting letter from Morris Shaffer, in which he told us of spending a most interesting three-month period in Colombia, South America, during the past summer. His family went along and had a complete holiday while Morris spent a good deal of his time making a survey of medical education in that country. He and his family greatly enjoyed the weather, terrain (broad, fertile valleys and high mountains, on the Caribbean coast) and, above all, the friendly people. Since getting back to the U. S. A. in early September of 1957, he has spent a good bit of his time in traveling through the eastern half of this country as a peripatetic chairman (a) departmental, (b) of the Laboratory Section of the American Public Health Association, or (c) the Microbiology Study Section, National Institute of Health, Division of Research Grants. Morris concludes with the comment: "Such is the life of a professor these days."

We have the following changes of address to report: Harry L. Beohner, the Permutit Company, Room 500, 50 West 44th Street, New York 36, N.Y.; Wayne S. Hertzka, 32 Fremont Street, San Francisco 5, Calif.; Professor Royce G. Kloeffler, Blue River Lodge, Manhattan, Kansas; Milton Mezooff, 155 Calla Street, Providence, R. I.; James G. Muir, Apartment 11, 105 Peterborough Street, Boston 15, Mass.; Horace B. Preble, P. O. Box 227, Carbondale, Pa.; and Alan W. Vint, 1437 Robinhood Road, Meadowbrook, Pa. — GEORGE P. WADSWORTH, *Secretary*, Room 2-285, Department of Mathematics, M.I.T., Cambridge 39, Mass. RALPH W. PETERS, *Assistant Secretary*, 249 Hollywood Avenue, Rochester 18, N. Y.

1931

Word from Eliot (Ducky) and Jo Graham via a Christmas card tells that they have been at Fort Lee during October, November, and most of December. Ducky was taking a top management course. By now they are back in their apartment at 8900 East Jefferson, Detroit 14, Mich.

Albert H. Cooper, who was formerly professor of chemical engineering at the University of Maryland, is now chairman of the Department of Chemical Engineering, Pratt Institute, Brooklyn 5, N. Y., and general manager of the American Industrial Chemical Company (Division of

Amerace Corporation), Butler, N. J. His mailing address is P. O. Box #359, Ridgewood, N. J.

Jim Fisk was mentioned in a December 29, 1957, article in the *New York Times* as one of "the distinguished men on the advisory panel, or as consultants to it" for the Gaither Committee.

An announcement, dated January 15, told of Gil Roddy's election as president and chief executive officer of Boston Manufacturers Mutual Insurance Company and Mutual Boiler and Machinery Insurance Company.

George Bunker was in the news again when he told a Senate group that the inter-continental ballistic missile Titan could be put into actual production "at a relatively small financial risk."

The following address changes have been received: Chas. B. Basinger, 1078 Croton Road, Wayne, Pa.; Dr. Samuel Jacobson, 57 Martin Terrace, Hamden 17, Conn.; John H. King, 204 Renfrew Street, Arlington 74, Mass.; Alfred M. McClure; Frederick J. O'Sullivan; Dr. Denis M. Robinson; and Commander Otis A. Sibley. — EDWIN S. WORDEN, *Secretary*, 9 Murvon Court, Westport, Conn. GORDON A. SPEEDIE, *Assistant Secretary*, 90 Fal-mouth Road, Arlington 74, Mass.

1932

Time for class notes again, but the material is getting thinner. Many of you promised to keep me loaded with news items of particular interest to members of our Class of 1932. But thus far, most of you have disappointed me. It is important that the interest which was regenerated at our reunion be continued through this medium. It is not a question of blowing your own horn; rather, it is a privilege for all of us to know what the rest of the members of the Class have been doing. Please consider this a bawling out for lack of news and a plea for information on you, your family, and your activities.

Two of our classmates have been honored by the Institute of Radio Engineers by being appointed fellows. This is the highest membership grade offered by the I.R.E. and is bestowed only by invitation on those who have made outstanding contributions to radio engineering or allied fields. Jacob Millman, VIII, was cited for his contribution to the field of pulse circuits. He is professor of electrical engineering at Columbia University. Harner Selvidge, VI-A, was cited for his contributions to the field of military electronics. He is with Bendix Aviation Corporation in North Hollywood, Calif. Congratulations!

Rear Admiral Selden B. Spangler, XIII, who received his master's degree in Naval Architecture and Marine Engineering with our Class, was recently named a fellow of the Royal Aeronautical Society of Great Britain. He has also received a fellowship of the Institute of Aeronautical Science. He is the only American Naval officer to hold fellowships in both organizations. Admiral Spangler is now in command of the newly established Naval Air Development and Material Center at Johnsville, Pa. He has earned the reputation as being the father of the Navy's gas turbine program and is usually given

credit for the development of the propeller jet engine in the United States. In addition to his prominence as an aeronautical engineer, he has also served as a pilot on carriers and has accumulated more than 5,000 hours as an aviator. Congratulations are indeed in order to our distinguished classmate!

We like to hear news of civic endeavors of our classmates. Martin T. Meyer, XV, has just been made a member of the Cheltenham, Md., Township Planning Commission. That is a good service which M.I.T. men should be prepared to render in many communities. In my own case, I have been serving as a member of the Citizens' Committee of the Town of Winchester, Mass., appointed to survey the curriculum of the local high school and to raise its standards in the fields of mathematics and science. All of us know of the terrific competition which lies ahead for young people in their attempts to get into the colleges of their choice. The high schools need help, and we who are active in scientific and engineering careers should be able to furnish constructive criticisms and guidance to principals and school committees. I have one boy coming along in the Winchester Junior High School. The older boy is in his first year at the Phillips Exeter Academy.

I have been active in the field of air pollution control for some time. We offer a graduate course in that subject here in our Sanitary Engineering Division. This summer we are presenting a two-week Special Summer Program in Air Pollution Control. This will be given jointly by the Department of Meteorology and the Department of Civil and Sanitary Engineering. Those of you who are in industry may be interested in sending some of your men to this course, which will be held from August 11 through August 22. As many of you know, this field is becoming increasingly important to public health officials who are given the power to enforce air pollution regulations, as well as to industrialists who are faced with the economic problem of having to change processes or install air cleaning equipment to meet the new regulations. On January 15, 1958, I had the privilege of addressing the National Tuberculosis Association Convention in New Orleans on the subject of "The Air We Breathe." Many of the health agencies are becoming increasingly interested in the health significance of long-term air pollutional effects. This is one field where so many scientific and engineering disciplines are brought together in an attempt to solve some very complex problems, including those of smog, smaze, and other patented terms. Some of you must have problems in this field. We would be glad to hear from any of you if we could be of any help.

On the way to New Orleans I had a stopover in Atlanta. At the airport bar I saw John Lawrence, XVI. We were both booked on the same plane and traveled together from Atlanta to New Orleans. In a previous issue of class notes I wrote that John had left the presidency of Joy Manufacturing for the vice-presidency of a much larger organization — Dresser Industries. That title lasted only two months. Now he is an executive vice-president in charge of all machinery pro-

duction and development. He has a sumptuous new home in Dallas. His family seems to like the move as much as he. It was interesting to learn of the many problems and responsibilities of running an aggressive and expanding industrial organization.

Don't forget to send us some notes! — ROLF ELIASSEN, *Secretary*, Room 1-138, M.I.T., Cambridge 39, Mass.

1933

Your reunion committee set out to make our 25th a memorable occasion. The reaction of the Class to the preliminary plans shows clearly that we will have a grand group aboard from June 14 to 16 here on campus. If you haven't indicated your intention to come (with your wife, young man — and to the COEDS, bless you, with your husbands!), do so now. A post card will do the trick; an extra two sentences about your present activities will be appreciated for a future issue of these notes. Someone has asked whether non-graduates are "eligible." Good heavens, man, you are part of the aristocracy of the Class, — even of the whole Alumni Association. It has been said that many of our best Alumni left before graduating, and many of these on the urgent advice of some well meaning but probably misguided faculty committee. Yes, by all means, come on and join the gang on June 14!

Your Secretary has been remiss in not reporting earlier on a most interesting account from Frank Heselton, IV-A, who was "stirred to write by thoughts of the 25th reunion." Frank is with the Corps of Engineers at Sault Ste. Marie in Michigan, where he is concerned with the design and construction of locks and dams. Frank and his wife have three children — a boy, 16, who is headed for technical school in '59 (maybe M.I.T.); another boy, 14, with similar talents; and a girl, 11, who is a born executive (ah yes, we know much about 11-year-old executives!). Frank has twice been elected to the chairmanship of the board of education. He has also served as treasurer of the board.

William D. Harper, Jr., IX-B, reports from far-off San Antonio, Texas, where he is assistant dean of the Texas Chiropractic College, as well as an active practitioner. Bill has given an impressive list of speeches across the country on a variety of subjects in the chiropractic field. He visited the Cambridge area last summer on one of his tours. Friends of Gene Cary, XV, will be glad to hear that Gene is getting along well. Son Bob Cary has finished his Army stretch and is a junior at Colorado University, and son Ted entered engineering school last fall with a wonderful five-year scholarship. The Carys still reside in that Colorado town with the intriguing name of Steamboat Springs.

David B. Smith, VI, Vice-president of Philco, got a well deserved write-up recently in the "Profile" feature of *Almanack*, the Institute of Radio Engineers publication. Elected a fellow of I.R.E. in 1948, Dave has played a leading role in television research and in the formulation of policy on television transmission standards. Author of numerous technical papers, holder of many patents, Dave's ac-

tivities include service on many important national advisory panels. The Class should take pride in the effective contributions which many of our classmates are making on the national scene; their names and pictures appear frequently in the national press.

Colonel Francis H. MacDuff II, went to Darmstadt, Germany, last fall with his wife and daughter Jane. Their son, George, is attending the University of Maryland in Munich. Mac's address is 6911 R.G.M., A.P.O. 175, New York. Our congratulations to James R. Merrill, VI, who was recently appointed manager of Raytheon's new laboratory at Santa Barbara, Calif. Quite a move from the home office operation in Newton, Mass. Jim's new address is Box 3281, San Roque Station, Santa Barbara.

Our congratulations, too, to Edwin R. Gilliland, X, Professor of chemical engineering at Tech, on his election as a director of the American Institute of Chemical Engineers . . . Remember — come one, come all on June 14. — R. M. KIMBALL, *Secretary*, Room 3-234, M.I.T., Cambridge 39, Mass.

1934

The steering group for the Compton Scholarship Fund has been meeting during the fall. Sam Blake has come up with ideas which should help the Class attain its goal; and what is more, he is seeing to their execution. Present at the December second meeting were Hank Backenstoss, Roger Coffey, Dave Mooney, Hal Reynolds, Les Doten, Sam Blake, Carl Wilson, Chuck Kearney, Ken Lippitt, Joe Fishman, Lou Frank, and Walt McKay. Progress has been good, but much remains to be done by 1959.

We learn that Bill Mills's construction firm, Mills and Jones, of St. Petersburg, Fla., is general contractor for building a \$20,000,000 Anheuser-Busch brewery in Tampa. Bill's company was selected because of its excellent reputation in the building industry. Perhaps some of us will one day inspect Bill's handiwork. A brewery visit is always a pleasurable experience.

Sam Untermyer is operating manager at General Electric's Vallecitos plant at Pleasanton, Calif. This plant began selling commercial atomic power in October. The plant capacity is 10,000 kilowatts and it was built at a cost of only \$3,000,000, of which \$500,000 went for a turbine generator installation.

Jim Archer, for some years director of the patent department of the American Cyanamid Company in Stamford, Conn., is a board member of the U. S. Trademark Association. This is a non-profit group devoted to trademark matters.

Ed Sylvester, who last summer was elected president of American Ship Building Company, is now a director of the Shipbuilders Council of America.

Walter Kelliher, who started with our Class, is now mayor of Malden. He has practiced law in Malden for some 15 years.

Charles Jerome was one of the 10 prominent lighting designers and engineers from all sections of the country recently named a fellow of the Illuminating

Engineering Society. The elite of the Society. Chuck is with Sylvania in Salem, Mass., and for the past 10 years has specialized in the development of fluorescent lamps and has been a member of several research teams working in this field. He has also been active in the development of electroluminescence, the new light source produced without a filament from an electrically charged luminous layer between two slabs of glass.

This is what some editors might call filler. Just because too few of you send in material to be included in the notes, I (Malcolm Stevens) am reduced to saying something about my own activities. After sampling all phases of contract research administration in our Division of Sponsored Research at M.I.T., I have for the past 18 months been chasing inventions. Elusive things, with many ideas looked at and evaluated for a few that look promising, and even fewer that turn into patents of substantial quality. As far as I can see, this business requires a well developed sixth sense, advanced degrees in at least six fields (five more than I have), an ability to pry out of inventors incomprehensible information that would defy the best reporting practice, and good luck with a dousing rod. Other more common administrative skills are useful, too.

Apart from beating the M.I.T. bushes to find worthwhile inventions, I have for some years taken an active part in my community politics. First, Board of Public Works; and for the past four years, School Committee. These committee experiences have helped to thicken my skin. An additional reward is in seeing a growing town improve its educational plant and program.

If you have any immediate items of news, please send them to any one of your three secretaries. John Hrones will be writing next month's column, and Walt McKay the one after that, provided we stay on schedule. — *Secretaries*: WALTER MCKAY, Room 33-217, M.I.T., MALCOLM S. STEVENS, Room 1-139, M.I.T., Cambridge 39, Mass. JOHN A. HRONES, Vice-president for Academic Affairs, Case Institute of Technology, Cleveland 6, Ohio.

1936

You may have noticed that we missed the notes last month. Up until then we had a perfect record. I guess everyone was too busy Christmas shopping to send in any news. Please keep the news flowing so this does not happen again. This lack of material is getting to be a major problem. While in Chicago recently, I had a chat with Jack Austin about this very thing. It's a tough problem, and there is only one way to lick it — send something in on yourself and one other classmate, if possible.

John Bete, President of Bete Fog Nozzle, Inc., of 309 Wells Street, Greenfield, Mass., is making the news and expanding his company again. He is producing a new type of nozzle he designed while an independent consultant engineer in Boston. A patent for the device was applied for in 1947, and the first samples were manufactured in 1949. Actual production work began in 1950. The only nozzle of its kind on the market, it has been constantly

improved since the original design. It is a non-clogging spiral type which shears the regular jet stream into a series of cone sprays as the liquid passes through the spirals. John's company also offers to clients an engineering service which includes the measurement of droplet size of the spray for industrial and technical use. The plant has done work for the government and has, in addition to its nozzle production, designed and built a special brush cutter. Specialized design and production is the forte of the company, including nozzles for use in agriculture, chemical processing, industry, fire fighting, and home use. The newest addition to John's line is a fog nozzle made from a single piece of metal with no internal parts; this construction provides a non-clogging, inexpensive device for use in fire protection and industry.

Captain Charles Trescott retired from active service in the U. S. Navy and is now manufacturing manager at Zenith Plastics Co., P. O. Box #91, Gardena, Calif. Bernard Vonnegut gave a paper at the December meeting in Indianapolis of the American Association for the Advancement of Science. It was entitled "Prerequisites of Weather Control." Bob Worden's firm of Worden and Risberg announced the opening of a West Coast office on January 2. It is located in the Russ Building in San Francisco, Calif.

Here is a real piece of news. It is so seldom we hear from the coeds of our Class, with the one exception of Alice (Hunter) Kimball, that it comes as a very pleasant surprise. Kathleen Shott (better known these days as Major K. V. Shott, U. S. Air Force) was married to Lieutenant Colonel William K. Cummins, U. S. Air Force, on October 6 in the Tinker (Okla.) Air Force Base Chapel. For further details, write Sheppard Air Force Base, Texas.

Bill Healy is technical secretary and director of the New Hampshire Water Pollution Commission. Bill has been with the New Hampshire Board of Health as a sanitary engineer since 1937. He is also secretary-treasurer of the New Hampshire Waterworks Association. Bill recently spoke on water pollution problems of the Connecticut Valley watershed at a meeting in Hanover, N. H., sponsored by the League of Women Voters of Hanover.

There is news of a second wedding, that of Jimmy Craig and Elizabeth Gibbs Ripley. It took place December 12 at the Church of the Transfiguration, Little Church Around the Corner, New York City. For further details, write Tony Hittl; he passed this information along to me.

Ralph Dockendorff is acting assistant division head, Engineering Division, at Humble Oil and Refining Company's Baytown, Texas, refinery. Ralph was recently granted a U. S. patent covering an improvement in a process for reconcentrating used sulfuric acid. As water is boiled off from the acid, the vapor is sprayed with added dilute acid to reduce foaming of the boiling liquor and cool the vapor. The Dockendorffs have a daughter and live in Baytown at 1704 East Texas Avenue.

Charles Crede has been vice-president of Barry Controls, Inc., Watertown, Mass., since 1945. He is the holder of a number

of patents in the field of refrigeration, railroad freight cars, and shock gages, and is the author of technical papers in related fields. He was recently renominated to the vice-presidency of Region I, the American Society of Mechanical Engineers. Charlie held the same post in 1955-56. Within the Society he has served as chairman of the Boston Section, member of the executive committee, and member of the general committee of the Machine Design Division; and he has held a number of other responsible positions. Charlie's latest address is 14 Brookside Avenue, Winchester, Mass. — JIM LEARY, Secretary, One Putnam Park, Greenwich, Conn.

1937

Joe Heal, class treasurer and chairman of our Class Gift Committee, submits the following report to our Class: "I'd first like to take a moment to clarify a point which has been confusing many of our class members. Since last summer, we've all received several Alumni mailings — some from myself for our Class Gift, and some directly from the Alumni Office. Don't let it worry you, though, as it's all one and the same thing. Alumni Fund Officers stated that our Class would receive full credit for all gifts by members of our Class if we would participate in a special personal solicitation program. This we have done, as have about 15 other classes — with more to follow as the program gets under way. More about this later. Our present giving as a Class is in the neighborhood of \$6,000 per year, which we hope to push to \$20,000 per year — with a goal for our 25th of over \$100,000. This, however, cannot be accomplished without the co-operation of everyone in the Class.

"*Status of our Class Gift Insurance Program* — Many of you may feel confused as to why we have this personal solicitation, after having set up the Class Gift Insurance Program to cover our 25th Class Gift. 10 or more years ago, we set up our Class Gift Insurance Program to answer all requirements for a satisfactory gift for our 25th reunion. This was considered a good approach at the time, and was done by quite a few classes. The group subscribed to the plan, some buying one unit of insurance at \$500, and others purchasing a \$1,000 policy. The group finally reached about 45 people with insurance of about \$30,000. As the 25th approaches, the desirability of purchasing insurance is less and less worthwhile. As a result, we have had almost no one enter this plan in the last five years. The Institute has also informed us that they prefer cash to insurance, as they have their own administration group for investing and handling monies. In addition, the failure of members to pay their premiums has been a problem with some classes. The actual cash value of our insurance at our 25th probably will not amount to much more than \$12,000 to \$13,000. This would be increased if I died, as all of the \$500 policies are written on my life. Sorry folks, but I plan to hang on for a while yet!

"Since our '37 class members have the reputation of not being too free with their money, perhaps due to starting out during

1933, your officers felt our Class might like to show what we can do when we're of a mind to. This brings me up to the present program, which we might call for lack of a better name, — THE SPECIAL GIFT SOLICITATION PROGRAM. It can readily be seen that our insurance program with a small number of people participating would not do the job that was originally anticipated. As a result, your officers approached the Alumni Fund Advisors to secure advice on what would be the best approach for securing additional funds. They stated that they were in the process of setting up a special gift solicitation, which had been very successful in many colleges.

"In a nutshell, this special solicitation program consists of approaching those persons in our Class who we feel have the money and the desire to aid the Institute in their program. The purpose of this special program is to secure funds from those persons willing and able to give \$100 or more annually. To accomplish this, your officers prepared such a list of class members. Sorry, folks, if we left some persons off the list, or if we included you though at the moment you may feel not in a position to give to this extent. Secondly, we secured vice-chairmen for those areas having more than four of our Class of '37 Alumni in the area. Next, these vice-chairmen secured solicitors to cover additional class members in their area, for each additional four persons. A special mailing was made to those persons, which was followed up by the solicitors and vice-chairmen. Another mailing was made to those persons on this list who were in such widely separated areas as not to allow personal contact. Finally, a third mailing was made to the remainder of the Class, whom it was felt might not be in a position to give to the extent of those on the personal solicitation program. In any event, give to the extent of your ability. The Institute needs the funds to carry on a hard hitting program.

"I'd like to take time to thank as a group all of the Vice-chairmen and Solicitors that have participated in this special gift solicitation. They've done a swell job and their work is certainly appreciated. The Vice-chairmen and Solicitors are as follows: Boston, Vice-Chairman—Ralph Webster, Solicitors—John Nugent, Harry Corman, Tom Kinraide, Frank Tibbetts; Hartford, Vice-Chairman—Walter Wojtczak, Solicitor—Robert Morton; New York City, Vice-Chairman—Al Busch, Solicitors—George Wemple, Bob Weppeler, George Ewald; Rochester-Buffalo, Vice-Chairman—Stan Zemansky. In the short time available, we were unable to secure a Vice-chairman in all the areas. However, we hope that this will be corrected by next year.

"We have a third program, which is getting under way, for securing funds — a program with which everyone should be fairly familiar — Business Gift Solicitation. Ralph Chapin has consented to co-ordinate activities connected with the solicitations of funds from companies. This can be an excellent way of building our Fund, as many companies are giving to colleges and the tax situation makes it less painful. We are already in receipt of several sizable company contributions in

the name of Class of '37. If you are in a position to influence your company giving, please use it. If you have any questions regarding this program, please call on Ralph Chapin or myself for additional information. Actually, all that is necessary is to send along the company check to the M.I.T. Alumni Fund, with an accompanying letter to Joe Conrad to make sure that it is credited to the Class of '37.

"I want to take this opportunity to thank everybody for the co-operation to date, and you will undoubtedly be hearing from me in the future. Let's all get together to make our Class Gift a really worthwhile fund."

A fine job of organization, Joe, and with such a good start I am sure that all of us will begin to loosen our money belts and face the program realistically, or in other words, write that check now.

Received a card from Norman Birch, who is with the American Brake Shoe Co., National Bearing Division, as director of research. The Birches—Norm, Elvie and their two boys—live at Route 6, Box 2497E, Sappington 23, Mo. Also heard from Link Herzeca, who lives at 29 Greenway South, Babylon, N. Y., and who, I hope, will very shortly give us a detailed account of his travels, and so forth, since graduation. It was good to hear from Artie Hunt, whom we all remember as that dynamic coxswain of the crew. Drop us a line, Artie, and give us some news.

Joe Smedile reports that he is no longer comptroller but now has a training regiment at Fort Leonard Wood, Mo. Leo Danton promises to send "lots of news" in a very short time. I wish everyone would make a similar promise and then do their best to live up to it. The Dantonas live at 12 Euclid Avenue, Winchester, Mass. Bob Brauer, his wife Rita, and their five children are living at 522 Forest Avenue, Evanston, Ill. Drop a line and tell us about yourself, Bob.

Bob Rudy sent us a note in which he enclosed a clipping about Windy Johns and family which appeared in the *New York Times* on December 28, 1957. It is headed "Wife Helplessness Is Best Device for Inspiring Husband's Inventiveness," and then continues by mentioning that Alice has achieved her success "in the care and feeding of the inventive mind" by being supremely helpless when faced with mechanical failures in her household. Windy then comes to the rescue; and instead of puttering, he invents devices that seem never to fail. I can imagine the comments by the better halves when they read this.

We continue our request for material for biographical sketches on the members of our Class. This issue those whose name begins with either G or H are specifically urged to send the pertinent information about the different positions they have held; their family; books, pamphlets or articles they have written; their Army career; clubs; travel; and so forth.

Just received a card from John Jacobs, in which he reports: "The reunion was great, although I have seen better tennis played in some places. Am looking forward to the 25th. Have been skiing with the kids each week end. How about a local (Mid-Atlantic) get together? At least Bob Rudy would show up." Sounds like

a fine idea, John, and suggest you and Bob get together and spark plug the idea of a Mid-Atlantic meeting. I am sure you would get plenty of co-operation from Windy Johns and Al Busch. John had two articles published last year in the *Petroleum Refiner* and also another article this January in the *Industrial and Engineering Chemistry* magazine. Good going, John. I wish that I could say that writing articles came easy to me, but such is not the case; and cards like yours help me immensely when doing these notes. The Jacobs—John, Betty and the two children, live at 541 Ashmead Road, Cheltenham, Pa.

The following changes of address have been reported to us: Albert L. Varrieur, the Martin Co., Baltimore 3, Md.; Brigadier General Theodore A. Weyher, 925 Mariana Avenue, Coral Gables, Fla.; Charles B. Holland, 509 Hancock Building, Niagara Falls, N. Y.; Mrs. Lynn S. Spring, 422 Seerley Boulevard, Cedar Falls, Iowa; David Richardson, 234 Kreag Road, Fairport, N. Y.; Charles R. Kahn, Jr., 627 Maitland Avenue, West Englewood, N. J.; Richard Lamphere, Oak Ridge National Laboratory, Oak Ridge, Tenn.; Rear Admiral Richard S. Mandelkorn, Lansdale Tube Co., Division of Philco Corp., Lansdale, Pa.; Willard D. Rand, Jr., Wurster, Bernardi and Emmons, 202 Green Street, San Francisco 11, Calif.; Dr. Peter G. R. Kolupaev, 474 Dorchester Road, Akron, Ohio; Edwin H. Olmstead, Mounted Route, Pine Road, Mt. Holly Springs, Pa.; Samuel Noodleman, 3311 Beredith, Cincinnati 13, Ohio; William C. Wold, Guinea Road, Cos Cob, Conn.; Enno T. Sauer, 1790 Cathedral Road, Huntington Valley, Pa.; Lieutenant Colonel John B. Corbett, 1300 Grass Hill Terrace, Falls Church, Va.—ROBERT H. THORSON, *Secretary*, 506 Riverside Avenue, Medford 55, Mass. Professor S. CURTIS POWELL, *Assistant Secretary*, Room 5-323, M.I.T., Cambridge 39, Mass. JEROME E. SALNY, *Assistant Secretary*, Egbert Hill, Morristown, N. J.

1938

We regret to report the death of Richard West, who was lost while flying a plane over Lake Erie last December. He worked for the West Instrument Corp. in Chicago. If any of our classmates can supply additional information, we should be glad to include it in a subsequent issue.

We have a note from Anthony Innamorati who writes that he was: "Reassigned from Washington, D. C., to Boston to assume duties of regional director for Public Buildings Service, General Services for New England States, and to be in charge of operations, maintenance, repair, and construction of federal buildings."

A release from Esso Research and Engineering Co. tells us that Frank C. Somers, a section head in the construction engineering division, has been appointed assistant manager of Esso Engineering's newly established office in The Hague, Netherlands. During his company service he has traveled extensively, this past summer being assigned to a refinery project at Cartagena, Colombia. He also has had assignments in Canada and Venezuela dealing with refinery work and consultation programs. He began his Esso career

in 1939 as a student operator in Aruba. In 1953 he joined Atlantic Refining Company in Philadelphia as manager of engineering research. He returned to Esso Research in January, 1957, as assistant supervising engineer of his division's procurement section.

Another release announces that Humble Oil and Refining Co. has installed an I.B.M. 705 computer for business use. William Harp has been responsible for adapting the computer to technical and research needs. He has been with Humble since graduation.

An article in *Iron Age* (October 17, 1957) presents an interesting account of the work of Colonel Henry Thayer, commanding officer of the Philadelphia Ordnance District. He has a bit of sound advice: "When you turn in a defense contract you want to do it on a knowledgeable basis. Too often an uninformed company will take a wild stab at a contract hoping that if its bid is too low to realize a profit an adjustment can be made later."

We've had several speakers among the Class recently. Miles Leverett spoke at the fourth annual conference of the Atomic Industrial Forum, Inc., New York City, October 28 to 30. The conference theme was "The 1957 Nuclear Industry, Problems and Progress." Another was Clifford Nelson, who discussed "The Electrical Aspects of Heart Research" before the Maine Section of the American Institute of Electrical Engineers. He is with the Maine Medical Center in Portland. Lyndon Crawford recently presented a paper on pipe stress analysis before the annual meeting of the Society of Naval Architects and Marine Engineers. Lyndon is assistant operations research manager for the Electric Boat Division of General Dynamics. Finally, we find that Ed Bentley spoke to the North Quincy (Mass.) High School on invention and research. You may recall that Ed is an alumnus of that high school.—DAVID E. ACKER, *General Secretary*, Arthur D. Little, Inc., 15 Acorn Park, Cambridge, Mass.

1939

It is always pleasant at Christmas time to get cards and some brief notes. This year Jean and Sid Silber sent another fruit cake from their chain of bakeries in Baltimore. The cake was delicious, of course; and I believe that if Sid had stayed in aviation and applied there the skill he has demonstrated with his bakeries, we might today have less trouble with our missiles program. For all those who want delicious fruit cakes, for themselves, or gift-wrapped in handsome tin containers, write Sid at 7002 Reisterstown Road, Baltimore 15, Md. Sid will remit the usual 10 per cent off the top to Doc Wingard for application to the fund for our 1959 reunion.

While touching the brethren for funds I'd like to mention that, under the sales vice-presidency of Bob Casselman, Polaroid grossed \$47 million last year. This company probably has available some long green with the short future which might be applied to our reunion project. How about it, Bob?

Cards received also from the two production chiefs. Wiley Corl sent one with

a picture of his six all lined up in step-style, and George Cremer took time on a flight between San Diego and Los Alamos to drop a quickie. (Note, that is.)

Bob Touzalin wrote from Cleveland; and we heard also from Al Laker, who lives way across on the other side of Los Angeles.

Gus and Prilla Hunicke, Sam and Elaine Sensiper, and Os and Lucille Stewart all sent cards with pictures of their youngsters. Pictures of the small fry are always great, but next year how about having these pictures taken with wide-angle lenses to get some of the daddies and mummies in? And if the mummies object to this comment, I'll be glad to have reproduced and without editorial comment the reply of any such mommie who hasn't "spread" just a little from the time of the Senior Prom.

Bill and Adie Pulver have moved to a lovely large home on the shores of beautiful Lake Wononscopomuc, four miles from Millerton, N. Y., on Connecticut route 44. Adie wrote "It's *easy* to find!" Now how you can find a place in New York when traveling on Connecticut roads beats me; and surely finding the place would be easier than spelling it. However, all that aside, I can say after having personally received the Pulver hospitality, that anyone who is successful in overcoming the spelling and geographical obstacles in getting to the Pulver place will surely have a warm and wonderful welcome after he gets there.

Woody, Phyllis, and Billy Baldwin want to be remembered, and the Bob Fifes have taken time out from a few trailer junkets to extend Season's Greetings.

Bob Godfrey '40 and ever-livin' Miriam sent a hand-colored card from Livermore, but Bob did not say whether he is doing any more with his recitations of "Little Algy."

So, we have started another year. These notes are scheduled to appear in the March issue, and there is still time, if you'll sit down *now* and drop me a note, to get your news in one of the editions before the summer holidays start. — HAL SEYKOTA, *Assistant Secretary*, 416 Calle Mayor, Redondo Beach, Calif.

1940

It is again my pleasure to report on the doings of the Keyes family as recorded in their annual Christmas message. "Route 1, Box 796, Vineyard Avenue, Pleasanton, Calif. Dear Friends: We guess, like us, some of you have often wanted that little place in the country, that little chicken farm and all the peace, quiet, and comfort that goes with it. We now have a measure of that — our little quarter acre just outside the Pleasanton city limit. It's loaded with trees; the lemons are ripe now, with the cherries, peaches, plums, grapes, and figs have ripened earlier. A walnut tree on the street provided thirty pounds of its fruit. We are rich with nature's bounty; and you should see all the flies and fruit bugs, too!

"At the far end of our yard is the chicken coop which, for our boys, is our best attraction. All visitors are usually invited by Courtney and Timmy to come

see it. While without occupants, this building is most popular for playing in, on, and under. Maybe it will become occupied when the boys become 4 H's some years hence.

"While our house has only two bedrooms, we do have a lot of space due to a large semi-finished building in back which provides a workshop and extra storage space. Numerous and arduous projects confront us. The planting of a front lawn has already been done by Virginia; and if the birds will stop eating the seeds, we might have green grass soon.

"Our girl failed to materialize on our last visitation from that well-known, long-legged, long-beaked bird, so we are expecting a boy February next. As a consequence of this visit and the three prior ones, a third bedroom is project number one for next summer. The old man is too busy making himself a nuclear engineer to do this any sooner.

"Greg, our brown-eyed dark-haired youngest, has started talking and gives Courtney and Timmy many laughs with each new word. Our older boys are growing; they travel beyond our fences to enlarge their circle of acquaintances. The neighbor's television swells their store of knowledge, particularly of advertised products and doings of the 'Little Rascals' who, we are told, have already visited the moon — this ahead of the American sputnik. From Courtney we have learned to clean our rugs with Glamorene; and from Timmy, the song, 'Popeye the Sailor Man, Toot-toot!' The school bus passing our door reminds that in a year Courtney will be traveling on it — and to us a new era will begin.

"This is a great life and we love it. Vanguard has failed, but so what! No one should forget that the pathway to success is often paved with failure. Will history judge our nation less because we did not lead the way into outer space? Do these not count: that America has done to help its friends and to protect and aid the weaker peoples of the earth; and that its system of government has provided us with freedom of thought and action? At this time of the year, our distinctive pattern of celebration of a birthday reminds us of the success of a man who in his own time, by most, was considered so completely a failure. Our thoughts are of Him and His teachings.

"Our thoughts are of you, our wonderful friends. We wish we could see you all again; but if not, a Merry Christmas and Happy New Year from: Ray and Virginia, Courtney, Timmy, and Greg Keyes."

On my way back from Boston recently, I spotted the Aviation Consultants office of Dick Speas and John Casey at La Guardia Airport; but unfortunately they had already gone home for the day.

For those who might have missed it, and whose wives save old issues of the *Ladies Home Journal*, in the January, 1958, issue, there is an article by Professor Magoun '18 giving his experiences in teaching a problem Sunday School class. Throughout the article there will be noted the same principles which he followed at Tech.

Our Class President, Russ Haden, who was formerly general manager of the Or-

ganic Chemicals Division of Dewey and Almy, has just become general manager of the Chemicals Division of Virginia-Carolina Chemical Corporation in Richmond, Va. Lots of luck, Russ, in your new position.

Dave Sunstein, who is president of the General Atomics Corporation of Bala-Cynwyd, Pa., has been named a fellow of the Institute of Radio Engineers by the board of directors. The grade of fellow is the highest membership grade offered by the I.R.E. and is bestowed only by invitation on members who have made outstanding contributions to radio engineering or allied fields. Dave was cited for his contribution to the field of airborne radar.

Lieutenant Colonel Ed Bernard has graduated from the Associate Course of the U. S. Army Command and General Staff College at Fort Leavenworth, Kansas. At present, Ed is a manufacturer's representative for Sidney Lemberger and Son in Boston.

Frank Chesley, who is president of the Central Research Laboratories, Inc., Red Wing, Minn., is in the news since Nobel Prize winner Niels Bohr visited the Central Research Laboratories and received a pair of Master-Slave Manipulators. This equipment is used for the remote handling of radioactive materials, and will be installed at the Institute for Theoretical Physics at Copenhagen, Denmark.

Herbert Hawkes has resigned from Tech's Department of Geology and Geophysics to accept a professorship in the Division of Exploration at the University of California.

Leonard Weaver was again in the limelight this Christmas season when he conducted the Neponset Choral Society's presentation of Handel's *The Messiah*.

Our foremost politician, State Senator David M. Johnstone, of Stonington, Conn., is now First Selectman of the town of Stonington. Dave was appointed to fill the office until a special election is held.

Frank Penn has been lucky enough to be transferred to the Orlando, Fla., headquarters of the Minute Maid Corporation. Frank is a vice-president of Minute Maid and is responsible for all production and procurement. Now, if Frank can arrange to spend his summers in Maine, he will be all set.

Lieutenant Colonel Harry Bush has been transferred from New York City to Tripoli, Libya, as post commander of the Tripoli Army Post which serves Wheelus Air Base, the largest air base outside the United States.

There must be a lot of truth in the old adage that no news is good news, since there has been a woeful lack of correspondence to fill this column. — ALVIN GUTTAG, *Secretary*, Cushman, Darby and Cushman, American Security Building, Washington 5, D. C. SAMUEL A. GOLDBLITH, *Assistant Secretary*, Department of Food Technology, M.I.T., Cambridge 39, Mass. MARSHALL D. MCCUEN, *Assistant Secretary*, 4414 Broadway, Indianapolis 5, Ind.

1941

We had Christmas cards from Carl Aronsen, Bill Fox, and Bob Montana; and from them we learned that Bill is now assistant

to the technical superintendent of engineering at the Bethlehem Shipyard at Sparrows Point, Md., and that Bob is with W. R. Grace and Co., and living in Summit, N. J.

Nathaniel Rochester, manager of information research for the International Business Machines Corp., Poughkeepsie, N. Y., has been honored for his work in the design of calculating machines by being named a fellow of the Institute of Radio Engineers. This is the highest membership grade in the I.R.E., and public recognition of the award will be made March 26 by the president of the I.R.E. at the National Convention in New York City. Congratulations!

Robert Purvin, recipient of a doctorate of science in 1941, was elected executive vice-president of the Foster Grant Co. of Leominster, Mass., effective September 1, 1957. The firm is a molder of plastic products and a producer of raw materials for the plastics industry. Prior to accepting his new position, Dr. Purvin was president, director, and principal stockholder of Purvin and Gertz, a consulting firm specializing in petroleum refining, gasoline plant design and operation, natural gas and petroleum transportation, and petrochemical and general petroleum economics. Ares Bogosian has been named director of the systems plant for the Detroit Controls Division of American Radiator and Standard Sanitary Corp. at Norwood, Mass. He has previously been head of the Evaluation Group, Systems Development Division of the Rand Corp., and in the Military Operation Research Division of the Lockheed Aircraft Corp., in addition to spending eight years at the M.I.T. Instrumentation Laboratory.

Northrop Brown has been appointed a senior research chemist by the Du Pont Co., where he has been since receiving his doctorate in 1941. In his new position, he will pursue studies aimed at more complete characterization of the basic structure of "Delrin" acetal resin, a new plastic material developed by Du Pont. Du Pont has set up a technical section at its Circleville, Ohio, plant for process and technical development on "Mylar" polyester film; and Jake Nolen, who has been assistant manager of the plant since it began the commercial production of "Mylar" three years ago, has been named manager of the section. The new group will bring additional technical effort to improvements in process and product, and will work with the company's research laboratory in Buffalo, N. Y., and with the Circleville plant technical section. Dr. Nolen has been associated with "Mylar" since 1951, when he was given the assignment of co-ordinating activities of the research, production, and engineering groups engaged in scaling up production of the new film from development to full-size commercial plant.

Kenneth McKay has been appointed director of development, Solid State Devices, at the Bell Telephone Laboratories, in which position he will direct the development of a wide variety of solid state devices for telephone and military applications. After five years with the National Research Council in Canada, he joined the Bell Laboratories, where he undertook fundamental research studies on the phys-

ics of solids, including the interaction of electrons with solids and studies of secondary electron emission. In 1952, he was named head of a group concerned with physical electronics research; and in 1954, he was placed in charge of the solid state research group. Recently, he has been concerned with the effects of nuclear radiation on solids. Francis Merkle, now Captain, U. S. Navy, is commanding officer and director of the Naval Boiler and Turbine Laboratory at the Philadelphia Naval Base. And Lieutenant Colonel Edward Daley has been assigned duty as commander of the Springfield, Mass., Air Reserve Squadron. — IVOR W. COLLINS, Jr., Secretary, 28 Sherman Road, Wakefield, Mass. HENRY AVERY, Assistant Secretary, Pittsburgh Coke and Chemical Company, Grant Building, Pittsburgh 19, Pa.

1942

Ken and Jean Rosett's latest letter speaks for itself: "It has been an exciting year for the Rosetts. We moved from Tuckahoe, N. Y., to Park Forest, Ill., in July. After the normal period of furniture moving, picture hanging, rug laying and sundry fixin' up, all hands are well settled in the great Mid-West. Our new home is a ranch-type of redwood and fieldstone with a nice big family room where most of the mob spends a lot of time.

"Park Forest is a well planned development community of about 30,000 people. Though it's hard to believe, the area was just farm land and a golf course only 10 years ago. Today we have all the usual communal facilities and a large modern shopping center in the middle of town complete with branches of the big Chicago stores, including Goldblatts and Marshall Field.

"Our village is about 35 miles south and west of downtown Chicago. Ken goes to his office in Chicago some of the time but spends more of his time traveling around his 16-state territory. He sells United Merchants' industrial glass fabrics to the plastic, electrical, and aircraft industries. Johnny is in the first grade and Nancy is in the fifth grade at the Blackhawk school, which is only half a block from our house. It is one of the newest schools in the village and is only slightly overcrowded, making that situation just about the same as it is all over the country. There are scads of children around the neighborhood, so both of ours are having a fine time.

"Mixa has a generous enclosed backyard in which she runs around and from which she barks wildly at her canine friends. On one side she has a cute wire-haired terrier named Missy; on the other side a beautiful white Samoyed Husky called Taz. Jean, of course, looks after everybody and the house and Mixa, all of which is still a time consuming occupation. But she manages to be active in the Parent-Teachers Association, the Sisterhood, and such activities.

"The latchstring is always out and the bar is open, so if you are in the Chicago-land area, please drop in. All the best."

William R. Johnson has been appointed chief research metallurgist at Associated Spring Corporation's research center in Bristol, Conn. Mr. Johnson will be respon-

sible for the basic research being carried on at the Bristol center directed toward the application of new and improved materials and advanced metallurgical processing techniques to the problems of spring design and fabrication. Bill has been research metallurgist for the Corporation's Wallace Barnes Company division in Bristol since August, 1953. After graduating from Tech, he worked as a metallurgist for Crucible Steel Company through 1943, for Metalab Company until 1945, and for Standard Steel Works in 1946. From there he went to Armour Research Foundation as a research metallurgist and as supervisor of technical information services. He is a member of the American Society for Metals and on the executive committee of its Hartford Chapter; of the Society of Automotive Engineers, vice-chairman of engineering materials for its Southern New England Chapter and a member of its national committee on residual stresses; of the Metallurgical Society of the American Institute of Mining, Metallurgical, and Petroleum Engineers, and its New England regional conference committee; and of the American Society for Testing Materials' fatigue committee. He is also a member of Sigma Xi, honorary research fraternity. Bill is also active in the community life of Bristol, being a past president of the Jennings School P.T.A. and assistant scoutmaster of Boy Scout Troop 3. He is on the board of control of the Wallace Barnes Foreman's Club and a member of the Inquisitors Club, as well as a frequent contributor to its publication, *The Question Mark*, as well as to national technical publications. He and his wife, the former Jean Austin of Chicago, have two children and reside in Bristol.

Paul and Mildred Hotte write that the latest addition arrived on September 7, making their family a total of four boys. As previously reported, they recently moved to Indianapolis; Paul has been appointed general sales manager, Metallurgical Division, P. R. Mallory Company, effective October 1, 1957. Also in the family news is the announcement of the marriage of Patricia Lou Harris Goalwin to Maxwell H. Kaplan. Mac and Patricia were married in New York City. After a cross-country honeymoon, they will be living in Los Angeles.

To those who ordered copies of the class picture at our 15th reunion, we have received a communication from the Miller Studio of Hyannis indicating that 61 prints were mailed to 42 men in accordance with a list furnished to us. We understand, however, that several other individuals paid for pictures; but somehow the record with their addresses has been misplaced by the Studio. The names of the men to whom the studio has mailed pictures are Baltimore, Blakeslee, Bossi, Buford, Cavanaugh, Close, Coe, Crandall, Denhard, Friedman, Golembe, Goulder, Greenes, Hotte, Imsande, Kaplan, Katz, Keating, Kennedy, Kram, Kraus, Levere, Littwitz, Pease, Platt, Quinn, Rines, Rote, St. Jean, Schwartz, Seeley, Stanitz, Staszewsky, Steinberg, Stern, Thompson, Tower, Verrochi, Whitam, Whitman, Yoder, and your Secretary. If any others have not received the pictures they ordered, a card to me will start an immediate follow up.

Newman Marsilius, Jr., has been appointed an honorary director of the Connecticut National Bank. Mr. Marsilius will continue to serve as chairman of the advisory board of the bank's Trumbull office. At a recent monthly dinner meeting of the Y.M.C.A. Industrial Management Club of Keene and Cheshire County, New Hampshire, William C. Tallman gave a talk entitled "Peace Time Uses of the Atom." A post card from Captain William C. Fortune, U. S. Navy, of El Segundo, Calif., tells us that he is now assistant Bureau of Aeronautics general representative, Western District — for all BuAer contractors of aircraft or guided missiles in the seven western states. A similar note from David R. Lawlor of Honolulu tells us that last August the Operations Research Office field element in Japan was closed. He then moved to Hawaii to be the O.R.O. liaison representative with the Headquarters, U. S. Army, Pacific.

More correspondence due next month from your *Secretaries* — JACK QUINN in Hawthorne, Calif.; BOB KEATING in East Alton, Ill.; ED EDMUNDS in Albuquerque; and LOU ROSENBLUM, Photon, Inc., Cambridge 41, Mass.

1943

When I got my letter in January from Mr. Foo Yong, of Charfar, Bungko, I was quite happy to learn that somebody has taken the responsibility of getting our reunion plans underway. I expect to keep in touch with Kemp Maples and will advise you, through these notes, of those persons who are planning to attend.

Quite a few of our classmates have been promoted or honored recently. Lew Lipschutz has been appointed as a development engineer in the Machine Research Department at I.B.M., where he will head a group developing a large random access mechanical memory for computers and will also be responsible for the investigation of air film formation between magnetic tapes and rotating cylinders. Wilbur Davenport, Jr., who received his master's with our Class, was named a fellow of the Institute of Radio Engineers last November and was cited for his contribution to statistical methods in communication systems. He is a division head at the Lincoln Laboratory, M.I.T., in Lexington.

James E. McLinden, Jr., has been promoted to the new position of engineering section head for high power klystrons in the High Power Klystrons Engineering Department of the Electronic Tube Division of Sperry Gyroscope. In this capacity he will be responsible for the development of processing and fabrication techniques required by the activities of the division. Dr. Richard D. Potter, who received his master's degree with our Class and his doctor's degree from M.I.T. in 1948, was recently appointed director of the Production and Production Engineering Department at the U. S. Naval Powder Factory, Indian Head, Md. Irénée du Pont, Jr., was promoted to director of the Du Pont Polychemicals Department Sales Service Laboratory.

Eliot Payson, of Englewood, Colo., was recently transferred from the Baltimore division of the Martin Co. to the Denver

division, where he is running the rocket test stands and the laboratory on the Titan Project. Gwynn Robinson has moved to California from Colorado and is with Northrop Aircraft, Inc.

Please remember to send in your questionnaires to Jim McDonough so that his statistical survey of our Class may be more accurately compiled. You may have received your class dues letter by this time; remember, we request dues only at five-year intervals. I hope to have much more information about our coming reunion in the next issue of these notes. — RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford 3, Conn.

10-'44

My absence from these pages, as you may have guessed, indicates the rather complete lack of news notes or other communications from our far-flung group. Here, at random, are some persons we'd like to hear from: Greg Walsh, Al Van Rennes, Jack Thompson '45, Al Porson, Gabe de Roeth, Pete Quattrochi, Frank Pohanka, Bill Lillard, Bill Kalb, Bob Ilfeld, Bob Horsburgh, Ted Hellmuth, Jim Healy, Bruce Fabens, King Cayce, Mal Crowther '45, Julian Busby '45, and Stan Brown. Why not drop a card to the Alumni Office or to me directly with some information on your current activities, family, classmates you've seen, and so forth?

The few notes in front of me cover a period stretching back over a year. The one that catches my eye first is a feature article from the Louisville *Courier Journal* on architect Jasper D. Ward, who joined the industrial design section at the General Electric Company's Appliance Park in the fall of 1956. The article carries the headline, "Architect of 'Dream House' Works on a 'Dream Job' in Louisville." Jasper had previously practiced as an architect in Rye, N. Y., and was co-designer of an unusual contemporary house in New Jersey which won a 1956 Award of Merit from the American Institute of Architects. For General Electric Jasper is chiefly concerned with the future of appliances in their architectural setting; some of his work concerns developments in housing, office, and school design over the next few years; but he is also involved with longer-range investigations.

Another note of interest concerns Robert V. Bruce, who entered the Institute with our Class, but then after service in the Army completed his studies in the field of history at the University of New Hampshire and Boston University, where he received the Ph.D. and is now a professor of history. He is the author of the book, *Lincoln and the Tools of War*; and at present he is preparing a study of the great strike of 1877, aided by a grant from the Guggenheim Foundation. In the world of science and engineering, we have a note that Lew McKee is now assistant chief product engineer of the Barden Corporation, Danbury, Conn. Lew has been associated with Barden since 1947 in product engineering.

Chuck Arnold has become manager of the Avionics Laboratory of Sylvania Electric Products, Inc., at Waltham, Mass. He joined Sylvania in 1946, and in 1956

he was made technical manager of the Laboratory. Chuck and his family live in Milton, Mass. General Electric Company advises that Edwin J. Merrick is a member of the engineering staff of its Missile and Ordnance Systems Department in Philadelphia, working on the development of the nose cone for the Atlas Intercontinental Ballistic Missile and the Thor Intermediate Range Ballistic Missile. Dr. Harold A. Knapp, Jr., advises that he is living in Germantown, Md., where he is in the process of building a modern home in the middle of 10 acres of beautiful countryside. He is attached to the Office of Operations Analysis and Planning, U. S. Atomic Energy Commission. E. J. Costello has recently transferred to the New England District Office of Fischer and Porter Co., Philadelphia manufacturers of process instrumentation and systems.

Over a year ago we reported that Tom Jackson had gone to Honduras on an economic development project for the Honduras government. It turned out that within a year a military coup ousted the former strong man, and the new government was not able to continue the arrangement with Tom's firm, Arthur D. Little. Tom and Lyn are now back in Hopkinton, with some excellent tales to tell; and although their stay in Honduras was shortened, Tom had apparently made good progress on plans for developing a local housing material industry, which may have considerable value elsewhere in Central and South America. Since his return Tom has changed jobs; he is now associated with a recently-organized products development consulting firm in Boston. In a recent letter from Dallas, Stan Smock reports that he is still with Procter and Gamble "making soap like mad," but we get the impression that he and Jean are somewhat hopeful that after nine years as displaced Yankees in Texas there might someday be an opportunity to move back North or out West. Stan tells us that he and Jean and the two girls were on the West Coast during the past summer and dropped in on Cort and Dorie Ames in San Mateo and George and Clara Quisenberry in Palo Alto. The Smocks were also in touch with Ryder Amthor awhile back, when he was down from Louisville to a convention in Dallas.

Up New England way, we periodically see Bud Bryant of Arthur D. Little; Scott Carpenter of Godfrey L. Cabot; John Granlund of the Institute Faculty; Ray Wilding-White '45, who is working in advertising production while also studying for a master's degree at the New England Conservatory and teaching music at Archbishop Cushing College; and Dick Jorgenson '45, who is an advertising space representative covering New England from his home in Granby, Conn.

Here are some changes of location reported over the last year: Albert Atkinson from Falls Church, Va., to Park Forest, Ill.; John Brindle from Braddock to Pittsburgh, Pa.; Richard Cross to San Diego, Calif.; Joseph Davidoff from Atlanta, Ga., to Montreal (remaining with the Kenyon and Eckhardt advertising agency); William DiZenzo to Fairfield, Conn.; Franklin Farmer to Kenmore, N. Y.; Cy Ferris to Montpelier, Vt.; Bob Hunter from Park Forest, Ill., to Youngstown, Ohio; Paul

Kase from Cambridge, Mass., to Winter Park, Fla.; Bruce Lamberton to Cleveland; Lieutenant Commander Frank Laurenzano from Jacksonville, Fla., to overseas duty with a Navy Mobile Construction Battalion; Bruce Mayer from Bryn Mawr to Wayne, Pa.; Ralph Mudgett from Galipolis, Ohio, to Altavista, Va.; Chuck Simpson from Cleveland to Westlake, Ohio; Robert Speckmann from Roxana, Ill., to Flagstaff, Ariz.; Roland Wilkinson from Watertown, Mass., to Wheaton, Md.; and Lieutenant Commander John Woolston from Wellesley, Mass., to Stratham, N. H.

If enough notes come drifting in from the Class over the coming months, I certainly hope to be back with another column in an interval shorter than the one preceding this report. Best regards from Marblehead. — KENNETH G. SCHEID, *Acting Secretary*, 24 Lee Street, Marblehead, Mass. JAMES S. MULHOLLAND, *Secretary*, 19 East 62nd Street, New York 21, New York.

1945

On this mid-January evening Mother Nature has seen fit to dump a bit of water hereabouts that she failed to cough up last summer; however, Fran has battened down the hatches, and we are ready to roll.

In January we indicated that Bud Herick was to have been married. I am pleased to say that he did not chicken out at the last minute, and the big event did take place according to schedule on November 30. Bud and Norma have returned from the Caribbean, settling in West Hartford for the moment, although George expects Armstrong Cork will be moving him in the near future. I had a spot of Christmas cheer with Vince Butler and his charming bride Bobbie in New York a couple of days before Christmas. Vince was in from San Francisco to attend an American Medical Association seminar and thoughtfully brought along his new wife. I can sincerely say Bobbie is a real charmer — how she ever got tied up with old Vince is beyond me! The night I saw them they were off to show five reels of underwater movies that had been taken while honeymooning in Hawaii. Bobbie told me that Vince could be seen in a movie called *Forbidden Island* to be released this spring; it seems Vince doubled as a skin diver for the picture's star Jon Hall at \$40.00 per day! I'm pleased the Kern County Land Company sees fit to send Mr. Butler to New York regularly. Incidentally, if any of you are looking for money to aid you in marketing or developing an idea, let Vince know; for he may be able to help you obtain the finances you need.

As usual it was wonderful receiving Christmas greetings from many of you. I must be getting old and softhearted, but you mothers and fathers have some healthy, handsome children; Fran and I had no favorites, they all looked fine. George Bickford's three children are the spitting images of their old man with one noticeable exception — they have full heads of hair. Julian Busby's oldest, Jeff, looks husky enough to have several paper routes; in fact, I suspect he has! Lisa

Hickey appears to be a charmer, for she has Lou's fine looks; while the twin boys and young Janet look like Hickeys. Unfortunately, the New England Hickeys have moved from Concord to Moorestown, N. J., to eliminate Pete's weekly commutation to Camden. The family beagle appeared the center of attraction in Jerry and Lib Patterson's card; but I can assure you the boys are really Pat's attraction, from what he had to say. Chick and Helen Marie Street's daughters, Dave Trageser's family, and Bill and Elaine Shuman's four youngsters constituted noteworthy pieces of photographic art as well.

Bill MacKenzie of Allentown, Pa., reports that he has recently been promoted to senior project engineer in the Electrical Engineering Department of Pennsylvania Power and Light. Bill and his wife, the former Jane McLaughlin, 2-46, have three children: John 8, Catherine, 6; and Mary 4. Art Miller of Haywood, Calif., has joined other Tech men including our own Jim Shearer at the University of California Radiation Laboratory in Livermore.

In mid-October Jephtha Wade of Bedford was named a member of the corporation of the Museum of Science in Boston. As many of you know, Jep is associated with the Boston law firm of Choate, Hall, and Stewart. William C. Wittman, Jr., has been promoted by the Prudential Insurance Co. to manager of its Transcription Service Division. Bill joined the Pru in 1949 after receiving a master's degree in business administration at Pennsylvania's Wharton School. In mid-November Ray Staley delivered a paper at the American Meteorological Society Annual Meeting held at College Station, Texas.

Thornton E. Smith, presently serving his second term as treasurer of the M.I.T. Club of New York, has just been elected president of Kuhn, Smith, and Harris, Inc., 37-year-old New York building contractors specializing in commercial, institutional, and industrial construction. Thorn added as an afterthought the birth announcement of their third child and second son, Todd, born on November 8. I was most impressed with Dick Battin's achievements as outlined in a late October issue of the Lexington, Mass. *Minute Man*. The clipping reported that Dick had spoken at a recent dinner meeting held by the Boston Chapter, National Association of Accountants, which over 300 members attended. Dick discussed various practical examples of integrated data processing as presently used in industry, and inventory problems solved through the use of electronic computers. While earning his Ph.D. in applied mathematics, Dick served as a mathematics instructor. From 1951-56 he was assistant director for computing devices and missile studies at the Instrumentation Laboratory. Dr. Dick is presently on the research staff at Arthur D. Little in Cambridge, Mass.

Unless the news begins to pour in, these bi-monthly columns may become an annual affair. How about a little help? — C. H. SPRINGER, *Secretary*, Firemen's Mutual Insurance Company, 420 Lexington Avenue, New York 17, N. Y.

The mails, recently, have been noticeably lacking in correspondence from members of our Class. We assume that you enjoy reading about others in the Class, so it should follow that there will be many who will be interested in hearing of you. Chuck Wellard writes to say that after M.I.T. he went on to Carnegie Tech for his M.S. and is now assistant director of engineering at International Resistance Co., with his office in Philadelphia. The Wellards and two daughters live at Crooked Lane and Lawndale Avenue, Bridgeport, Pa. Winchell Hayward is a sales engineer with Century Electric Co. in San Francisco, Calif., and makes his home at 2320 Broadway, San Francisco 15, Calif.

After M.I.T. John Pollard earned his M.S. at the University of Vermont and then his Ph.D. at Cornell in 1955. He is a research plant physiologist at Cornell University, working on growth and metabolism of plants. (If you are ever in Boston, John, please look me up, as I could use some help in my weed patch.) John writes: "I have been married since 1949 to the former Florence Scannell, Registered Nurse, of Springfield, Mass. We have three sons, none of whom appear to be future candidates for Tech. What success I have enjoyed up to this juncture I feel I owe to John Lutz, my old wrestling coach at Tech, who taught us all to be good losers." Speaking of this column, he says: "Every once in a while I see a name with a familiar ring like Clinton Murchison, reminding me of the fun Clint Jr. used to have beating me at 128 pounds in the attic of Walker Memorial." He goes on to say: "My public appearances are limited to furtive visits to local rummage sales and junk shops in search of books by my current idol, Horatio Alger, Jr. I am at any time willing to speak, to listen, to agree, or to argue about this strange product of the Boston area. I am compiling a bibliography of his work and trying with lust and vigor to accumulate all of his written work. Has any one seen *Timothy Crump's Ward* (written anonymously)? This one eludes me." If anyone knows of Mr. Crump's tax deduction, or has any gardening problems, John can be reached at R. D. #5, Ithaca, N. Y.

William J. Gaugh has been with Northrop Aircraft, Inc., for the past 10 years, presently working as aerodynamicist design specialist. The Gaughs live at 10046 South LaSalle, Los Angeles 47, Calif. Paul Finefrock has been president of Roosevelt Material Co. for the past seven years. His business, located in Hobart, Okla., is in crushed limestone products, having an annual production of one million tons. Kathryn and Paul have two children and live at 113 North Hill Street, Hobart, Okla. Peter S. Wright has been a dynamics engineer at Grumman Aircraft, a product engineer in Product Research at Budd Co., and is now an engineer in nose cone design on the Atlas Project at the General Electric Missile and Ordnance Systems Department in Philadelphia. Pete is restoring a 200-year-old farmhouse out in the boondocks of Montgomery County, and calls R. D. 1, Box 232, Hatfield, Pa., his home.

Marshall Waller, after earning his M.S. in electrical engineering at the University of Illinois in 1951, has worked in Panama for a year and at various places in the U. S.; he is now chief of the Equipment Branch of the Test Division of the Army Aviation Board at Fort Rucker, Ala., engaged in acceptance testing of materiel for Army aviation. He makes his home at 808 Simmons Avenue, Enterprise, Ala. In his letter to your correspondent, Marshall comments that he believes all '46 classes should be combined. For his information as well as, I am sure, many others who missed the announcement in this column last year, such a change was made by unanimous vote at the 10th reunion two years ago. We are now all one big (1,300-odd, according to my card file) happy Class.

Richard C. Rauch has recently changed jobs and is now production control manager for the Okonite Co., manufacturers of wire and cable. Rick is married and lives at 781 Palmer Road, Bronxville, N. Y. (according to his letter, but since Okonite is located in Passaic, N. J., he may have moved by now.) Robert P. Fried is president of the Modern Machine and Tool Co., Inc., Staatsburg, N. Y. His company tackles any job no one else wants to handle. Their patent work is handled by C. S. Lyon's firm, and Bob hopes to get other classmates on other phases of his work. Bob is active in town affairs, and lives at Aberdeen Farm, Staatsburg, N. Y. Joseph C. Bates, Jr., is president of the Bates Engineering Co. of Sparta, Ill. They are service contractors to the Corps of Engineers, the Air Force, and other federal agencies in the repair and overhaul of various military equipment. Joe is married, has four children, and lives at 612 East Broadway, Sparta, Ill. George R. Grainger received his B.A. from University of California at Los Angeles in 1947, his M.S. from Notre Dame in 1949, and is working on his thesis in mathematics to complete his requirements for Ph.D. from Notre Dame. From 1947 until 1954 he was a teaching fellow and research fellow at Notre Dame, and he is now a research engineer at Convair-Astronautics, San Diego, Calif. His work is in reliability investigations regarding missile development work and is mainly mathematical and statistical. George is active in the Toastmasters Club, having served as secretary and now as educational vice-president. He is married, has three children, and lives at 3320 Hopi Place, San Diego 17, Calif.

Please don't ignore our plea. Sit down tonight, right now, and drop us a line to let us know what you are doing, expect to do, how large your family is, who in the Class you have seen or heard from recently, and so forth. — JOHN A. MAYNARD, *Secretary*, 15 Cabot Street, Winchester, Mass.

1947

The crocuses should be budding; and I'll take an advance guess that the ground hog didn't see his shadow on February 2, so that winter should be on its last legs by the time this issue reaches you all. The southern idiom is a small souvenir from a recent business trip to Baltimore and

Washington. Received a Christmas card from Bob Drye, Course VII, who advises that he is instructing in psychiatry at the University of Chicago Medical School; is residing at 6839 South Ridgeland Street in Chicago; was presented with a daughter, Barbara, last May 9. Dr. Hy Fisher is continuing his residency at Queens Hospital in Honolulu; and from his note there's no question that the island location is even a good place to work, as well as play. For you who may begin to wonder what's happened to some of the professors some of us studied under, your correspondent has news regarding Avery Ashdown: his last mailing address was Cleveland, Ohio, and he is evidently in good health.

Address changes have been numerous in the last couple of months; Mike Hardy phoned me just before Christmas and advised that he'd moved to Westfield, N. J., from Baltimore last May. He's still with the Buffalo Tank Corp., but is now assistant to the vice-president. His present family consists of his wife and four children. John Contegni resides in Briarwood, N. Y.; Paul Fletcher, in Los Angeles; Buck Cramer, in Hartford; Paul MacNeill, in Fayetteville, N. Y.; Bob Creek, in Los Angeles; Pete Portmann, in Bethesda, Md.; Dave Taylor, in Villanova, Pa.; Milton Pugh, in Silver Spring, Md.; Commander Harry Sipe, with the fleet at Box 49, F.P.O., New York, N. Y.; Brooke, Pietsch, in Baltimore, Md.; Walt Benulis, in Boxford, Mass.; Jack Lehmann, in New York City; Dick Mela, in Tarrytown, N. Y.; and Fred Ehrich is with General Electric in Lynn, Mass. Fred moved in from Kansas City, Mo.; and from the information available, your Correspondent would presume that it was the longest one from a distance standpoint.

Mitch Keamy, with whom I spent some time at the September Alumni Conference, advised that he has two children, a boy and a girl, and at present is with the Borden Company plant at Leominster, Mass., in charge of production; that particular facility manufactures polyvinyl chloride and associated chemicals. Incidentally, if you would like more complete address information regarding any of the boys listed above, let me know and I'll fill you in.

What would you think of an informal evening, in New York, strictly dutch, sometime in June? If you'd like, let me hear from you, and we'll work from there. — ARTHUR SCHWARTZ, *Secretary*, 176 South Harrison Street, East Orange, N. J.

1948

Victor C. D. Dawson writes that he is currently employed by the Naval Ordnance Laboratory, Silver Spring, Md., where he has been for the past six years. He was fortunate enough to be selected for a year's advanced study at California Institute of Technology for 1957-1958, and he is working toward a master's degree in engineering.

Ed A. Mason left the Ionics, Inc., as director of research to become associate professor of nuclear engineering at M.I.T.

Three very interesting changes have taken place in the lives of the Michael J. Kamis. They announce the arrival of a son and heir, James Allen Kami, who

weighed in at 9 pounds and 5 ounces in August of last year. In addition, Michael has been promoted to director of product planning of the International Business Machines Corp.; and he sends us a new address, 46 Westorchard Road, Chappaqua, N. Y.

A very interesting letter was received from Harry and Fran Meyer. Harry was assigned to a Honeywell autopilot project at Cannon Air Force Base at Clovis, N. M. They write that seven-year-old Janet, five-year-old Ellen, and three-year-old Francie are having many new, exciting, and interesting experiences in their new temporary home.

The board of directors named 75 leading radio engineers and scientists from the United States and other countries fellows of the Institute of Radio Engineers at the November meeting held in New York City. The grade of fellow is the highest membership grade offered by the I.R.E. and is bestowed only by invitation on those who have made outstanding contributions to radio engineering or allied fields. Among the recipients of this award are 14 Tech men. Two men from the Class of '48 received the award. Henry J. Riblet, President of the Microwave Development Laboratories, Wellesley, Mass., was cited for advances in the theory and design of microwave components. David F. Winter, vice-president of Moloney Electric, St. Louis, Mo., was cited for his electronic research at ultrahigh frequencies. Our heartiest congratulations to these two men!

The appointment of J. Wade Miller, Jr., of Wellesley Hills, Mass., as manager of the Central Services Division, Dewey and Almy Chemical Company Division of W. R. Grace and Company, Cambridge, Mass., has been announced. Wade was formerly manager of the Industrial Relations Department. He will be in charge of advertising, industrial relations, marketing research, office services, public relations, and purchasing.

In conclusion, let me remind everyone of our big 10th Class Reunion in June. See you there. — W. R. ZIMMERMAN, *General Secretary*, 6819 McEwen Road, Dayton 59, Ohio. RICHARD H. HARRIS, *Assistant Secretary*, 26 South Street, Grafton, Mass.

1949

We've an eight-month backlog of news to cover this month, so take a good look — there's probably a mention of someone you know. Picking up from last June, the following were present at Alumni Day: Jack and Mrs. Chaddock, Frank Darcy, Archie and Audrey Harris, Bud Jones, Scheff and Mrs. Lang, Henry Lang, Joe and Mrs. Lynch, Phil Lynn, Bill MacLeod, George McQueen, Bud and Mrs. Shank, Tom and Mary Toohy, Wally Row, and Dave Powers. According to Tom Toohy an extremely enjoyable time was had by all. In the same letter about Alumni Day, Tom went on to note that plans are underway already for our 10th reunion, which will be held in June, '59. Cochairmen of the Reunion Committee will be Russ Cox and Kemon Taschioglou. They will need help from the rest of us and plenty of it, so write to either Russ or Kemon and let them know of your availability. Their ad-

resses are: R. N. Cox, 57 Walker Street, Newton, Mass., and K. P. Taschioglou, 14 Hillside Avenue, Cambridge, Mass.

From the Alumni Association we have received notice of the death of Herbert Jacobs, Jr., last August 24; but we have no further details at this time.

Joe Altieri, after four years with Litton Industries in California, has been transferred to Litton's Mount Vernon, N. Y. office. Jack Anderegg is now president of his own firm, Dynamics Research Corp., Woburn, Mass. The new company is one of the first exclusively engaged in the development of inertial navigation systems, Bill Atkinson is currently chief mechanical draftsman at Electric Boat Co.

Dick Baxter is working as an instrumentation specialist for Convair at Edwards Air Force Base, Calif. R. J. Barriault has left Du Pont in Wilmington and is now with Avco Manufacturing Corp. in their Research and Advanced Development Laboratory in Lawrence, Mass. Marvin Becker is operating superintendent in lustrex extrusion for Monsanto's Plastics Division, Springfield, Mass. Dave Beckwith received his Ph.D. in applied mathematics at Brown University last June. His doctor's thesis was on "An Approximation Method for Plane Gas Flows."

Fred Beutler received his Ph.D. at California Institute of Technology last June. Bill Berresse and Cynthia Feindel were married last October 12 in White Plains, N. Y. Bill is with Allied Chemical and Dye. Air Force Lieutenant Colonel Alvin B. Buck was awarded the Commendation Ribbon for his work from 1954 to 1956 with the Air Weather Service. Dr. Jack Chaddock has joined the faculty of Rensselaer Polytechnic Institute, where he will be teaching thermodynamics, heat transfer, and air conditioning. Jack was previously an assistant professor at Tech. Dudley Chelton is with the National Bureau of Standards Cryogenic Engineering Laboratory at Boulder, Colo. Dudley's work concerns the development of a large hydrogen bubble chamber to use with the six billion electron-volt particle accelerator at the University of California Radiation Laboratory.

At the October meeting of the Acoustical Society of America two papers were presented by '49'ers; Ira Dyer spoke on "Measurement of Noise Inside Ducts," and James E. White discussed "Elastic Waves Along a Cylindrical Bore." Earl Eames returned to Boston last summer after a two-year consulting job in Finland for the Council for International Progress in Management. Earl has set up his own company, General Management Associates, Inc., in Boston. In December the Eameses were momentarily expecting their second child. Dave Eberly has joined Electro-Mechanical Research, Inc., in Sarasota, Fla. Dave is interested in forming an M.I.T. club for the Florida west coast. If you feel likewise, write him at 2315 Goldenrod Street, Sarasota, Fla.

Dr. Lewis Etherington has been named an engineering associate at Esso Research and Engineering Company, Linden, N. J. He has been associated with Esso since 1943. Peter Fagg has been promoted to project engineer in the Engineering Planning Department of International Business Machines' Product Development

Laboratory, Poughkeepsie. At the fall General Meeting of the American Institute of Electrical Engineers, Tony Gabrielle presented a paper (with T. J. Nagel) on the "Technical Aspects of Providing Service to Single-Phase, 60-Cycle Railroad Loads."

Major Roberto Galvez Barnes, Honduras Air Force, was recently praised in the *New York Times* for his leadership in arranging facilities for the new Central American Flight Information Center in Tegucigalpa, Honduras. Major Galvez Barnes was Honduras' first director of civil aviation. As Minister of Development and then as a member of the Honduran military junta, he has continued to exert his influence toward development of the Central American region. Lieutenant Commander Donald R. Geehring, former head of the Navy's Bureau of Aeronautics' high-energy fuel project, has joined the staff of General Electric's Flight Propulsion Laboratory, in Cincinnati, Ohio.

Chuck Holzwarth has been transferred from San Jose to Toledo, Ohio, where he is continuing his work in market analysis and sales planning for Owens Corning Fiberglas. Chuck and Shirley now have three children. Ralph and Paula (Kelly) Huggett have added a third son to their growing family — Brian Russell, born last March. Colonel Peter C. Hyzer, district U. S. engineer in Detroit, is in charge of several key phases of the St. Lawrence Seaway Project. These include widening and deepening of ship channels in Lake St. Clair, the St. Marys River, and the Amherstburg Channel.

Roland Jalbert and Elizabeth Bender were married last June in Vancouver, B. C., Canada. Roland is an assistant professor of physics at the University of Alaska. He was formerly at the Hanford Atomic Project, Richland, Wash. Jorgan Jensen is working on the Viking and Vanguard projects in Baltimore. He recently spoke on "Reaching into Space," as part of Baltimore's Adult Education Week. The Reverend Lloyd Jonas was installed last fall as pastor of the Bethel Evangelical Free Church, Eltingville, N. Y. Lloyd received his bachelor of divinity degree from Fuller Theological Seminary, Pasadena, Calif., last May. Ed Kerwin presented a paper on "Unsteady Flow Phenomenon in Supersonic Flow" before the Acoustical Society of America.

Bob King is now the proprietor of the King (Burial) Vault Co., Danvers, Mass. He was formerly Detroit sales representative for Hevi Duty Electric. Bob and Connie Stover of Lima, Ohio, were married in June '55. Ron Greene is now a sales engineer in the Chicago area with Haynes Stellite Co., division of Union Carbide. Beverley (B. J.) Kirkwood was recently made a partner in the firm of A. C. Kirkwood and Associates, engineers and consultants, Kansas City, Mo. Harry Lang has left Airborne Instruments and is now sales manager, Boonton Radio Corp., Boonton, N. J. Harry finished at Harvard Business School in June '56.

At the American Society of Mechanical Engineers — American Institute of Chemical Engineers Heat Transfer Conference held last August at Pennsylvania State, Fred Landis spoke on "The Effectiveness of Stub-Fins as Determined by the Tele-

deltos Paper Analog," and Charles Sleichner discussed "Experimental Velocity and Temperature Profiles for Air in Turbulent Pipe Flow." Dr. Erwin G. Loewen has been promoted to technical director at Taft-Peirce Manufacturing Co., Woonsocket, R. I. He was formerly staff engineer and director of machine tool production. Stan Margolin is continuing his work with Arthur D. Little and is now a senior project engineer in the process Metallurgy Group. The Margolins welcomed their third daughter, Jan Laura, in November.

Jack McKelvie has joined the scientific staff of Research Laboratories Division, Bendix Aviation Corp., Berkley, Mich., and is working in the field of machine tool control. The McKelvies have two sons and a new daughter who arrived last June. Betty McElhill has become a member of the special projects department at Monsanto's Research and Engineering Division, Everett, Mass. She was formerly a research chemist with National Research Corp. Paul Miller has left the Navy to work with Daystrom Systems, division of Daystrom, Inc., which is building a new laboratory in La Jolla, Calif., to design automatic systems for process industries. Fream Minton is enrolled at the Golden Gate Baptist Theological Seminary, Berkeley, Calif.

V. R. (Pete) Murphy participated in the National Service Industrial Association's national convention in Buffalo last May. Pete, representing Reliance Electric and Engineering Co., spoke on the importance of electronics as an essential industrial tool. Herb Neitlich is now with the Gene Hays Agency (New England Life) and the John Liner Co., selling property and casualty insurance in the Boston area. Leonard Newton is now with Opinion Research Corp., Princeton, N. J., as a research executive. Len's work is selling market research on public relations, stockholders' attitudes, readership of publications, and so forth. The Newtons have a daughter, Julie Ann, and a "son" due soon. Captain Roger W. Paine, Jr., U. S. Navy, is now commanding Destroyer Division 282 with operations at sea in Northern Europe, the Mediterranean, the Red Sea, Persian Gulf, and Caribbean Sea.

Louis Peloubet has been re-elected an associate director of the New York Chapter, National Association of Accountants. James A. Reid, M.D., is continuing his work in internal medicine as part of the resident staff, Strong Memorial Hospital, Rochester, N. Y. Jim is married and the father of two future . . . ? . . . Tech men. Rex Shanks is now on training assignment with the Manufacturing Department, Esso Standard in New York City. For the past eight years, Rex was with the Refining Department of Humble Oil and Refining Co. Charles Sherman has been appointed senior research associate for Jones and Laughlin Steel Corp. He was formerly director of research at Latrobe Steel Company.

Donald Sparrow has joined the staff of Arthur D. Little in the Research and Development Division, working in the field of pulp and paper and related products. He was formerly with Scott Paper Co. and Polaroid Corp. Peter Stein is continuing his work at AiResearch in Phoenix. Each year he visits Tech to assist in the

two-week Strain Gage Summer Course and also assists in a similar program at U.C.L.A. He recently retired as chairman of the Western Regional Strain Gage Committee. At the National Meeting of the American Meteorological Society held at College Station, Texas, last November, William Widger (and C. N. Touart) presented a paper on "Utilization of Satellite Observations in Weather Analysis and Forecasting." At the annual conference of the Atomic Industrial Forum in New York last October, Charles Trilling spoke on an "Organic Moderated Reactor Experiment." He is with Atomics International, North American Aviation, Inc.

Dr. Jack Westbrook, metallurgist at the General Electric Research Laboratory, recently received the Francis Mills Turner Award from the Electrochemical Society. His award-winning paper was titled "Temperature Dependence of Hardness of the Equi-Atomic Iron Group Aluminides." Thomas Wuerth is executive director of the Ansonia (Conn.) Redevelopment Agency. He has previously worked as field representative with the federal Housing Home Finance Agency and with the New Haven (Conn.) Planning Association.

'57 brought the Hagermans our third son, Richard William on last November 1. Please note again Tom Toohy's request for volunteers in getting arrangements underway for 1949's 10th reunion. — O. SUMMERS HAGERMAN, JR., Secretary, 8519 Pringle Drive, Cincinnati 31, Ohio.

1952

There seems to be a shortage of news coming in this fall, but here goes with what we have on hand. First, a letter arrived in the fall from Stan Sydney, Class Agent, calling attention to the 1958 Alumni Fund drive. 'Nuff said, but let's make a good showing. From Bob Briber we received a forwarded letter from Edward Mayne, Surrey, England, who finally managed a way to send his class dues (\$2.50) from England now that currency restrictions have been lifted. Bob also mentioned that Jim (J. P.) Saunders had been in Boston and is now working for the Attorney General on tax cases (fortunately not Internal Revenue?). J. P. received his law degree from Vanderbilt University in Nashville and went into the Attorney General's Office by competitive exam. He is living in Washington, D. C.

Bayard G. Gardiner, Jr., has just been promoted in International Business Machines to the position of project engineer in Magnetic Tape Devices Department. Clifford Sayre writes that he has been transferred from Wilmington, Del., to Charleston, W. Va., by Du Pont, where he is now assistant technical superintendent. Cliff also mentions a five-week vacation in Europe. Charles E. Hecht is doing research work under a post-doctoral fellowship from the National Science Foundation at the Institute for Theoretical Physics at the University of Amsterdam, Holland. James R. Warren, after receiving his M.B.A. from Harvard Business School, joined Pacific Semiconductors, Inc., in Culver City, Calif., where he is concerned with the transfer of new semiconductor devices from research and development into manufacturing.

Enrique Ho-Leong has changed his job from Fuels Research Laboratory at M.I.T. to Canadian Industries, Ltd., in Montreal, Canada, where he is in the engineering section. Arthur C. Herrington is now with Whiting Research Laboratories of the Standard Oil Company of Indiana. Orin C. Hansen, Jr., is now with the Film Division of Olin Mathieson Chemical Corp. in New Haven, Conn.

Your Secretary ran into Harvey Eisenberg in the Radio Shack, and he tells me he is now back in Cambridge at M.I.T. Industrial Management School for a master's. Harvey married Helene Schleman of Middletown, N. Y. on June 16, 1957, and they are living on Bay State Road. Also Robert Goode married Margaret Addison Smith in Cambridge in September. Bob is with Arthur D. Little, Inc. in Weston, Maryel French married Dudley Hartung. He is with Sanders Associates, Inc., of Nashua. Dorothy Holt married William Quinn in Worcester; and they are now living in Paris, France. Constance Linberg and Roger Borden are living in Newton Center after their October 5 marriage. From Fran and Al Kandel comes word of a new daughter, Adrienne Beth. Al is now with American Bosch Arma, and they have recently acquired a new ranch style house in East Meadow, Long Island, N. Y.

Your Secretary is now traveling in Europe for a holiday; and until further notice, any news and notes for the column should go to Stan Buchin, 1402 Commonwealth Avenue, Boston. I'm finishing this column up in London, prior to embarking for Marseilles and the Riviera. Then off through Europe, and Africa, probably not due back in the States for quite a while. Hope to see some of our classmates living abroad.

And while our Secretary goes wandering, word comes from our First Assistant Secretary, Jim Margolis, as follows: "Al and Fran Kandel had their second baby girl, Adrienne Beth, born October 16. Al is with American Bosch Arma in Long Island. He told me that Howie and Adele Zasloff also had a second baby girl, Sally Ann, born on October 12 in Holland. Howie has been on a foreign assignment in Holland for the past two years with the Lummus Corp. Ed Judd, according to his brother Bob, is at Purdue working for a master's degree in civil engineering, taking courses in missile engineering. Ed went to West Point for four years following a year at Columbia. After two years in Artillery and Ordnance, the Army has sent him to Purdue.

"Ed Selig has been active in community affairs in Mamaroneck, N. Y. He did quite a bit of work for the Community Chest drive the past two years. Ed is production control manager at Adler Electronics, Inc., in New Rochelle, N. Y. He tells me that Al Sevcik was graduated from the Harvard Business School this past June and is now doing market research work for Benton and Bowles in New York City. Ed Wright went with Chrysler Corporation in Pittsburgh this summer. Would like to get some more news from the Pittsburgh area. Pete Southwick is also in Pittsburgh with Gulf Oil.

"Burt Wendroff is at Los Alamos. Bill

Knox is in Alaska. Bill Mueser has also been active in local M.I.T. affairs. Bill was chairman of the annual dinner meeting of the M.I.T. Club of Westchester at the Scarsdale Country Club. Dean Thresher was the speaker for the evening.

"Please drop me a line if you'd like to see your name in print. The address is 218 Richbell Road, Mamaroneck, New York."

Bob Briber and Stan Sydney have joined the world of fatherhood. The two events happened within twelve hours of each other at the Boston Lying-In Hospital this past fall. Stan and Bob King were recently named associate members of the Alumni Council.

Larry Garthe and brood (two children) are now back in the Boston area out in Acton. Larry has forsaken Dixie Cups for engineering administration at Raytheon. Burge Jamieson is still at Minneapolis-Honeywell Company, Boston Division (formerly the Doelcam Division). Burge is now a part owner of the Listening Post, a hi-fi mecca in Boston. Burge is proud father of two vigorous progeny, including my sprightly godchild.

According to the Dunn Newsletter, Bill and Emily and the kiddies are thriving in the midst of Shawnee, Kansas. Bill is gallivanting around the countryside for the Harshaw Chemical Company.

Seen at the Buchin wedding: Bob and Carol Walsh, Ed Margulies, Nick Melissas, Sandy Isaacs. Everybody outdid himself in doing up the red wagon in wedding finery. Still brushing out the I.B.M. punched holes.

Remember, if you've got some news or just want to use up some ink, write Jim Margolis or Dana Ferguson, c/o American Express, Nice, France, or me in plain old icy Boston. — STANLEY I. BUCHIN, Tenth Assistant Secretary.

Merwin Blum and his wife Janice had a new addition last September, Sheri Ellen. Merwin is a research engineer for Rocketdyne and living in sunny San Fernando Valley, Calif. In another section of the country, E. F. Turner, Jr., has recently been awarded an associate professorship at Washington and Lee University. Turner was assistant professor of physics at George Washington University from 1954 until his recent promotion. Manny Rotenberg has taken a one year's leave of absence from the Los Alamos Scientific Laboratories to join the Princeton University faculty. Manny and his wife, Paula, have two children now: Joel and Victor.

Item of news. One of our classmates, Ralph Raynard, Jr., has taken over the Washburne Company, established in 1884, to manufacture weathervanes and eagles. Ralph made the New England newspapers for making a 30-inch eagle which roosts on top of President Eisenhower's weathervane on his Gettysburg, Pa., farm. Ralph's most recent eagle, six and one-half feet tall, is perched on top of the New Hampshire State Capitol. Can you top this item of news? Another classmate said goodbye to his bachelorhood. Allen Kaplan married Phyllis Goldberg in Brookline this past November. They are settling down in Brookline, Mass., after a honeymoon to Haiti, Jamaica, and Miami Beach.

There seems to have been a migration to

Baltimore, Md., recently from our Class. To name a few: Charlie Joslin; Zolt Lucas; Lieutenant Norm Niederman at Headquarters, Air Research and Development Command; Lieutenant Clif Peistrup; Fumio Saito; Dr. Ben Shaver, in residence at Johns Hopkins Hospital; Bill Stange; Dr. Pete Von Hippel. Pete was in New York a couple of months ago attending American Chemical Society lectures. Also in the Navy, Pete is doing medical research; others in the Baltimore area, Pat Wolfe and Maurice Yeager.

Other bits of news — Palmer Shannon, living in Greenwich, Conn., just came back from a business trip to British Honduras. Palmer recently went off on his own as a general broker in chemicals and related fields (and unrelated fields also). If you need 930,000 pounds of mercury, or a fraction of it, he is the man for you to see. Before going into this business venture, Palmer was with the Dave Garroway show. Bob Thurston has taken his wife and two children from the Chappaqua, N. Y., area to Pittsburgh, Pa. Bob is still with the Ethyl Corporation. Bayard Gardineer and his wife have a baby boy, now six months old, Bayard G. Gardineer, 3rd. Bayard is working with International Business Machines on hydraulic research at their Ossining, N. Y., plant. He has seen Gus Rath at I.B.M. in Ossining and has heard from Leon Polinski, who is working for his doctorate in chemical engineering at Brooklyn Polytech. Herm Smotrich is also working for his Ph.D., at Columbia University, in nuclear physics. Charlie Beckmann is now living in Ohio working very hard at the Cincinnati General Hospital as a doctor, and I hear he loves it. Ed Pettitt writes that he is now living in Seattle, Wash. What are you doing way out there, Ed? Charlie Mathews has left New York City for Buffalo.

There will be a cocktail party for the Classes of 1950 through 1957 at the M.I.T. Club of New York the end of the month in which these notes are being written (January). There should be a good turnout of the Class of '52, and more information to pass on. When you are in New York City, drop in on the Club quarters now located in the Hotel Biltmore, right across from Grand Central Station. Drop a card. The rest of the Class would like to know what you're doing. — JIM MARGOLIS, *Acting Secretary*, 218 Richbell Road, Mamaroneck, New York. STANLEY I. BUCHIN, *Assistant Secretary*, 1402 Commonwealth Avenue, Boston 35, Mass.

1953

In January I received word of the marriage of Steve Kliment and Felicia Ann Drury. Steve and Felicia are now living in New York City. John and Dotty Dunlay had a baby girl in November, 1957. John is at Convair in Fort Worth, Texas. Martin Levine is working at the General Electronic Laboratories, Cambridge, having finished his tour in the Army Signal Corps. Fortney Stark is at the University of California Graduate School of Business Administration. Fortney and wife Elinor have a son, Jeffrey. Elinor is a graduate of Smith, 1952, and she and Fortney were married in February, 1955.

Bruce Thomas reports that he has a position as an application engineer with Heat-X Inc., Brewster, N. Y.; and Sid Hess has a research assistantship in operations research at Case Institute. Sid is working for his Ph.D. at Case after finishing two years with the Army Chemical Corps. John Kaufman is now married to the former Ann Falk. Ann's home before marriage was Greensboro, N. C. John is working for Campus Sweater and Sportswear Co. in Ellwood City, Pa. "My duties," says John, "range from assistant manager through textile engineer to mechanic."

A note from Alex Pasztor tells of his three years in the Air Force as a ground electronics officer. Alex is now employed in advertising and sales promotion at General Electric in Phoenix, Ariz. Gene Hilton is back at Tech working on a Ph.D. in Course XII (geology; isn't it?). Edward Profio is married and has two children: Chris aged two; and Claudia, aged seven months. Ed is reactor operations supervisor at Tech. Donald Miller is at Procter and Gamble after receiving his M.B.A. from Stanford. Don reports that Gene McCoy is also with him at P. and G. I talked with Dick Neller recently; he is at P. and G.'s Quincy plant and plans to be married in June. I'll tell you more after the announcement of the engagement. Fred Cronin writes: "To heir is human; we have heired. Name: David Cronin; date: October 19, 1957; mass: .21 slugs; parents: Barbara and Fred Cronin."

Robert Beale is with the Martin Co. at the Cape Canaveral Air Force Missile Test Center. Bob is now a rocket propulsion group head for the field crew of Project Vanguard. Russell Kidder is in the market research department of Shawinigan Resin Corp. in Springfield, Mass. And last on our list for this month, Sidney Gravit is a senior dynamics engineer in the flutter and vibration group at North American Aviation in Columbus, Ohio. Thank you for the news that you have forwarded during the past few months. Incidentally, have you all received word of the forth-coming reunion? Mandy Manderson is the committee chairman and his address is 30 Memorial Drive, Cambridge 42, Mass. — VINSON W. BRONSON, JR., *Secretary*, 58 Greendale Road, Mattapan 26, Mass.

1954

The communique distributed to the Class by Dean Jacoby in December has been bringing results informative as well as pecuniary; and hence, after a two month drought, we again have a good supply of gossip to spread around. Paul Valerio writes that he is instructing in the Civil Engineering Department of the Brooklyn Polytechnic Institute and consulting in the field of structural engineering. Paul also reports that Marty Raab has forsaken the military life for architectural work in New York City. Marty and his wife now have in their possession a "bouncing baby boy." Ed Hofstetter has returned from a Fulbright trip to Europe and is back at work at Tech. John Zarcaro is flying jets for the Navy, and, according to Paul, was recently married to a "nice young lady from Texas." Sooren Soovajian

is well on his way toward taking over the Kingston Plant of International Business Machines Corp., Paul claims.

George Schwenk sends word from Ypsilanti, Mich., that he is studying something called management science at the University of Michigan. This is mostly mathematics, according to George, which seems reasonable. George also included the latest word on several of the Jolly Boys. Russ Barnes is working for Battelle in Columbus, Ohio. Lou Bogar has crossed the border to Chalk River, Ontario, the "Canadian Atomic Valhalla." Wally Boquist and Ray Swansen are working for Professor Edgerton's firm. Stan Hoff is living in Marblehead, Mass., and working for General Electric in Lynn, Mass. Stan and his wife Flo have a new addition to the family, Andrew, who was baptised at the M.I.T. Chapel. Shel Kavesh is living in New York City and working in New Jersey; just what "working" means here is not clear from George's letter. John Maybee is at the Law School of the University of Pennsylvania. Fred Schmitt is inching toward a Ph.D. in mathematics at the University of Michigan. Fred may or may not object to having himself classified with the Jolly Boys, but there he is.

From Dearborn, Mich., Perry Smoot writes that he has completed his two-year Army hitch and is now working in the Process Development Department of the Ford Motor Company. Perry spent his Army tour in Europe and got too close to Vienna; it was there that he met and married his wife Ursula. Ron McKay covered most of a Christmas card with a story to the effect that he and wife Sally have left Uncle Sam and retreated to Boston, where he is an assistant in an architectural acoustics course and working toward a master's degree in architecture, all presumably at M.I.T. John Dixon '55 also corresponds via Christmas cards, his latest noting that he has returned from a "vigorous" 20 months with the Army in the Far East. The whole thing was apparently too vigorous for poor old John, because he was too tired to say just what he is doing now. He did, however, manage to put down the news that Steve Lirot and his wife Shirley and son Gregory are in Delaware, where Steve is "food-teching" for Nestle's. Dean Jacoby, who is rather worn out himself from the effort required in sending out the letter to the Class in December, has tracked down the information that Bob Anslow is finished with his Army tour of duty and has settled with wife Ticki in Lexington, Mass. Bob is back at Raytheon working on long-range planning in the Commercial Division. He is living in "half of an old (1830) house. . . . The place has three fireplaces and fairly drips with tradition." Dean also reports that Dave and Pat Vogel and family have been transferred by the Army to Zweibrücken, Germany, until June, when Dave expects to return to civilian status.

Walt Eppler writes that he, Ken Heist, and Sam Losh are all working for the Ramo-Woodbridge Corporation of Los Angeles. Phil Rane was married last June to Maraline Matler of New York City. Phil is in his third year at Tufts Medical School. Tom Bird has temporarily relocated in Brazil, where he is looking for

more manganese "like a good geologist should." He expects to be in South America until May, 1959. Reed Winslow reports the birth of his second daughter, Elizabeth, last October. Reed received his master of engineering degree in highway transportation engineering last June, and is now with the Automotive Safety Foundation in Washington, D. C. Bill Eccles is still hiding at Fort Monmouth, where he is known as the assistant operations and training officer, U. S. Army Signal School Regiment. Milt Toorans is "associated with America's most crucial defense project," we are informed, which is under the auspices of the Missile and Ordnance Systems Department of General Electric in Philadelphia. Milt and his wife Aneta now have two children, Jerome and Susan. Charlie Shaw's job at Sperry Gyroscope Company is not quite as crucial, apparently, but important nevertheless.

We still have more to report, but we'll save it for next month. In the meantime, don't be afraid to drop a line yourself about your present situation. And we're still accepting dues from those of you who have not yet contributed. — EDWIN G. EIGEL, JR., *Secretary*, 3654 Flora Place, St. Louis 10. Mo.

1955

I am covered with rue, having neglected you all so long — really. But I hope that you'll forgive me on the basis of the new name and address below. After a couple of helter-skelter months in New York City, trying to dig up a thesis topic at Columbia, I was married on December 21 in the M.I.T. Chapel to Jack Venarde, a native of St. Louis, another chemical engineer who collected his B.S. at the Missouri School of Mines and an M.S. at the University of Minnesota. After a heavenly honeymoon in Bermuda, we have settled down (?) in Wilmington, where Jack is with the Atlas Powder Company. We'd love to hear from any M.I.T. folks in the area. (I assume that our happy home will be somewhat in order by the time that this is published!)

I must confess to neglect of your North Pole correspondent, too. Last time I heard, he was doing quite well, teaching a University of Maryland extension course in addition to the International Geophysical Year work. He reported that he was pleased with our class showing in the Alumni Fund Report (haven't seen it myself, since my mail seems to be scattered far and wide). I believe that thanks should go to Glenn Jackson for his efforts as class agent and to all our staunch, *contributing* Alumni. Denny also has a slightly different name and address (he got promoted), which should be noted.

I hardly know where to begin with the news: having collected a substantial number of clippings and cards in my silent era! A real storybook honeymoon, a camping trip all over Europe, climaxed a year abroad for Allan and Eileen Schell. Both Allan and Eileen spent last year in Delft on Fulbrights. Allan at the Technical Institute and Eileen at the United Nations International Training Center for Aerial Survey. They met on the boat to Europe and were married last May. Eileen, formerly Miss Conaghan of Winnetka, Ill.,

is a graduate of Stanford and a cartographer by profession. At last report the Schells were living in Lexington, and Allan was working in the Air Force Laboratory at Bedford, expecting to lose his civilian status at any time.

Also in the Boston area are Everett Kittredge and his new wife, the former Mildred Ingalls of Warner, N. H. Everett expected to be released from the Navy in December and should be returning to school soon. Oliver Mendler claimed a bride last August, the former Blanche Biro. The Mendlers are now living near Pittsburgh, where Blanche is teaching at the Duquesne University School of Nursing and Oliver is working with the Westinghouse Atomic Power Division and doing graduate work at the University of Pittsburgh. Bob Lee, recently released from the Navy I believe, writes from Minneapolis, where he is a research engineer in the aeronautics division of Honeywell, that he was married in August to the former Betty Linn. James Ahlgren and his wife bought a home in Herndon, Va., 18 miles from Washington, D. C., following their marriage in September. James is with Reed Research, Inc.

Bob Farrah claimed another classmate's sister as his bride in September. He was married to Deanna Diamond of Manchester, N. H., and Sid and his wife were on hand for the festivities. Deanna is an alumna of Clark University in Worcester and the Garland School. Tom and Beverly Marlow drove to Port Heuneme, Calif., where Tom awaits assignment to permanent duty with the Navy, after their wedding in November. The second daughter of a Faculty member to succumb to a member of our Class is the former Beverly Gamble, a graduate of Hollins College in Virginia. A more recent wedding is that of Pete Toohy to Jane Sullivan of Worcester and Wellesley College in January. Pete and Jane are now living in New York City, where Pete has rejoined Shell Chemical Corporation after his escape from the Army.

Another recent escapee, Ronald Kurtz, has gone to work for Fenwal, Inc., of Ashland, Mass., after two years at Wright-Patterson Air Force Base. He is engaged to Carol Strongin of Kingston, N. Y., a 1957 graduate of Antioch College. Warren Lattof wrote a jubilant and entertaining account of his last days with the Army in Germany. He and Charlotte are now back in Arlington Heights, Ill., where Warren somehow landed a job with the Lattof Motor Sales. He is making all sorts of rash promises about that "deal of a lifetime" on a new 1958 Chevrolet! Dave Brooks is once again a civilian, and he and family have settled in Denver, where Dave makes his headquarters with the U. S. Geological Survey. Jud Ball, too, has retired from the Army after two years in San Francisco mapping the South Pacific. He is in Philadelphia as an architect with the National Park Service. Elliott Perrett has gone to work for Farnsworth and Chambers Company in Houston after completing two years with the Air Force. But fear not! Still defending our country we have quite a number! Roy Saltman and Larry Schell should by this time have completed their Strategic Air Command training at McConnell Air Force Base in

Wichita. Roy and his family, including a son Bradford, who arrived last summer, expected to go from McConnell to Hunter Air Force Base in Savannah. Fran Selvetti is now in Germany with the Army, and Chan Stevens was scheduled to begin his six months with the Army at Aberdeen in November. Al and Mary Hauser are living in Aberdeen, where Al is serving at the Army Ordnance School, having left Alcoa in New Kensington, Pa., in July, 1956, for the Army. At Fort Dix Jack Zimmer and Valdemar Skov are serving their duty. Jack was with Goodyear in Akron before entering the service, Valdemar with Dunn Engineering Associates in Cambridge.

In the cigar department, Ash and Sue Stocker are proud parents of a son, Lewis, who arrived in September. Bob and Katrina Temple and family are living in Darien, Conn.; Bob is with ACF Industries, Inc., in New York City. Ed Bryan writes from Pittsburgh; he is working there with Jones and Laughlin and taking graduate courses at Carnegie Tech in the evenings. Arthur Gill is now a teaching associate at the University of California in Berkeley, working for his Ph.D. there. And Henry Weber is continuing his studies this year on a Fulbright in Perugia, Italy. Word comes from Turkey of the marriage of Tom Price to Salme Erkeskin of Istanbul. Tom is stationed at Goulouk, Turkey, as an electronics technician with the Navy.

Presenting papers at the October meeting of the Acoustical Society of America in Ann Arbor were Dick Lyon '55G and Dave Lipke. Marilyn Fraser has returned to Wellesley after two years in New York City. She is an instructor in art at Wellesley College and an instructor in architecture at M.I.T. Hal Stubing's Christmas card informs us that he has seen Frank Leitz, who is in Practice School and was temporarily in Bethlehem, and Ed Pulsifer, who is working out of Charleston, W. Va., for Beekman Industries. And Tommy Doherty '56, back in school at M.I.T., writes that Bob Esch '53 is now at Harvard Business School. What a joy, all this mail! Do keep it up. And I promise to behave in the future! — MRS. J. H. (Dell Lanier) VENARDE, *Secretary*, 107 Mullin Road, Wilmington 3, Del. FIRST LIEUTENANT LABAN D. SHAPIRO, *Assistant Secretary*, A03047883, Signal Ionosphere Station, A.P.O. 23, New York, N. Y.

1956

This month many of the five year group have joined us, enriching our group with advanced degrees.

Late one evening last week I stopped at the Two Acres Restaurant in Greenville, Ill. As I ordered coffee a voice inquired about Tech. Another classmate! Lieutenant Ronald Kiaer, U. S. Air Force, was en route to Scott Air Force Base, Illinois, from Andrews Air Force Base, D. C. After graduation from Tech he obtained his master's in architecture from Columbia. Since last June he has been in the Air Force, and before his transfer to Scott he was at Headquarters for Military Air Transport Service at Dover, Del.; Bermuda; and other bases. While at Scott he plans to work on his doctorate at

Washington University in St. Louis.

In December Guy and Lee Spencer visited me on their way from service at Fort Lee, Va., to work at Convair in Fort Worth, Texas. A recent letter from Lieutenant Morton Cohan came from Dugway Proving Ground, Utah. Mort received his S.M. in nuclear engineering last June at Tech and is now assistant chief of the Radiological Division at Dugway.

In the small fry department the Paul Lucketts added Elizabeth Winkler Luckett on November 18. Ted Korelitz wed Diane Blumsack of Brighton in 1956, and last fall they became the proud parents of Lynne Pamela Korelitz.

From the industrial division, Tom Fain is with Shell Chemical at Norco, La. Ted Korelitz is in the Process Design Division of the Sinclair Research Laboratories at Harvey, Ill. Paul Luckett is with El Paso Natural Gas at El Paso.

From the military, David and Ann Eaves are in Japan with the Navy. Joed Davis and Dick Kaufman are at Wright-Patterson Air Force Base.

In education, Stan Hart received a master's in geochemistry at California Institute of Technology last June. George Luthringer received his master's and is now working on his doctorate in Course II at Tech. Mike Turin received his master's at Tech last June.

In the expanding field of matrimony, Judith Gorenstein wed Elhanan Ronat (both '56) last fall. George Luthringer became engaged to Sarah Elizabeth Striebeck of Springfield, Ill., last fall. Oscar Manley became engaged to Elizabeth Boruchoff of Brookline. Leonard Ruthazer became engaged to Devora Shure of Newton Centre. Michael Turin wed Phyllis Dilbert of Great Neck, Long Island in November. — BRUCE B. BREDEHOFT, *Secretary*, 1528 Dial Court, Springfield, Ill. M. PHILIP BRYDEN, *Assistant Secretary*, 3684 McTavish Street, Montreal 2, P. Q. Canada.

1956G

Residing in Paris, France after a honeymoon in Nice on the French Riviera are M. and Mme. Pierre F. Turillon. The couple were wed in a double ring cere-

mony at the St. Nicholas Chapel in Houilles, France. Mme. Turillon, the former Elizabeth Ann Burrill of Hyannis and Rockport, Mass., graduated from Simmons College with a B.S. degree and a diploma in nursing. Pierre received an S.M. degree from M.I.T. in 1956. He was graduated as Ingenieur de l'Ecole des Mines et de Metalurgies de Nancy, France. Another ceremony with an international note was held for the marriage of Fedia Charvat and Miss Margaret Long of Brookline, Mass. and Coventry, England. They were married in Boston, the reception being held at the M.I.T. Faculty Club. He attended Leeds University in England and completed studies for the Ph.D. at M.I.T. Margaret went to St. Pauls College in Newbold Revel, England, and Katherine Gibbs School in Boston. She has been with the British Consulate in Boston for the past three years.

Mr. and Mrs. Robert Laudise have made their home in Somerville, N. J., after their nuptials in Taunton, Mass. Bell Telephone Laboratories in Murray Hill, N. J., and the Somerville, N. J., school system constitute their respective fields of professional endeavor. Robert holds a Ph.D. in chemistry. His wife is an alumna of Simmons College. The Hotel Commander, Cambridge was the scene of the reception following the wedding of John Bernard Flynn and Patricia Anne Sullivan. The former Boston College student met his bride while she was enrolled at Newton College of the Sacred Heart. Dr. and Mrs. Flynn are now living in Watertown, Mass.

Thibaut Brian, who had been stationed at the Chemical Engineering Department's Bangor Practice School, has returned to assume professorial duties in Building Twelve. Last year, Thibaut was made assistant professor of chemical engineering. Julian Beinart has joined the faculty of the School of Architecture at Yale University. His address is 113 York Street, New Haven, Conn. Bernard Borie is a physicist with the Oak Ridge National Laboratory in Tennessee. He is living at 426 Villanova Road, Oak Ridge, Tenn. John Koppernaes writes he has changed his address to 56 Lakefront, Apartment 1, Dartmouth, Nova Scotia,

Canada: "The change of address is due to a change of employment. Presently, I am employed as assistant professor in mechanical engineering at Nova Scotia Technical College."

Jose B. Cruz is still at the University of Illinois as an instructor in electrical engineering and Ph.D. candidate. No official statement has been made, but he should be a proud father of a second child by publication time. Two former Graduate House residents are now located in American industry — Ulrich Hoffmann with Du Pont in Wilmington, Del., and Forrest Getzen with Humble Oil in Houston, Texas. — ENSIGN CHARLES T. FREEDMAN, *Secretary*, U. S. S. Saratoga, CVA-60 Fleet Post Office, New York, N. Y.

1957

Alan Budreau is a research assistant in physics at Duke University, where he is a Ph.D. candidate. Harald Henriksen is a structural inspector for Metcalf and Eddy, Thule, Greenland. Merlin Lickhalter is currently with the firm of Wedemeyer and Hecker, architects, St. Louis; in April he joins the Quartermaster Corps at Fort Lee for two years. Joel Searcy is working at the Instrumentation Laboratory while studying for his S.M. in electrical engineering.

Among the second lieutenants who joined Uncle Sam in January and February were several '57 men. In the Quartermaster Corps at Fort Lee for six months are Bill Alcorn, Bob Palter, Jules Byron, and Richard Carson. In the Ordnance Corps, Aberdeen Proving Grounds, for six months are Ron Enstrom and Stan Kroder. Richard McCabe is in the Air Force for three years; Stan Clark is in the Chemical Corps at Fort McClellan for two years; and, inevitably, Yours Truly is also in the Chemical Corps, Fort McClellan, for six months.

As Marty Forsberg will be taking over this column for the next several months, please keep up the flow of letters, which has been good, to both of us. — ALAN M. MAY, *Secretary*, 55 East End Avenue, New York 28, N. Y. MARTIN R. FORSBERG, *Assistant Secretary*, 8 Forest Street, Cambridge 40, Mass.

Attention: All M.I.T. Alumni

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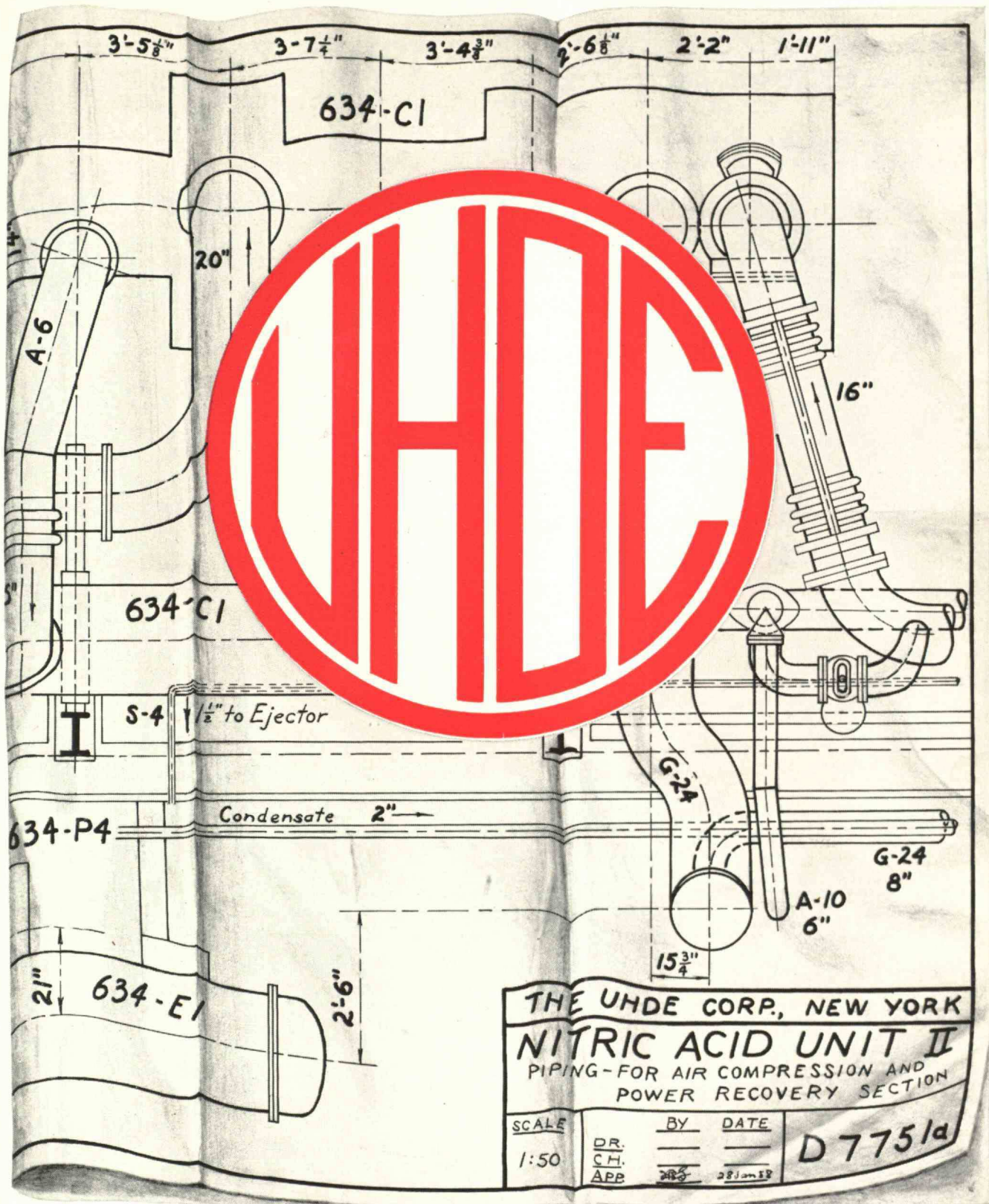
LUNCHEON IN DU PONT COURT

Dr. James R. Killian, Jr., will address our Alumni and their guests in his capacity as President Eisenhower's Special Assistant for Science and Technology.

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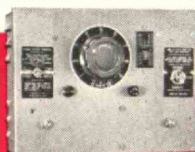
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Type 1701-AKW
stripped-down model
1/15 hp capacity
\$72

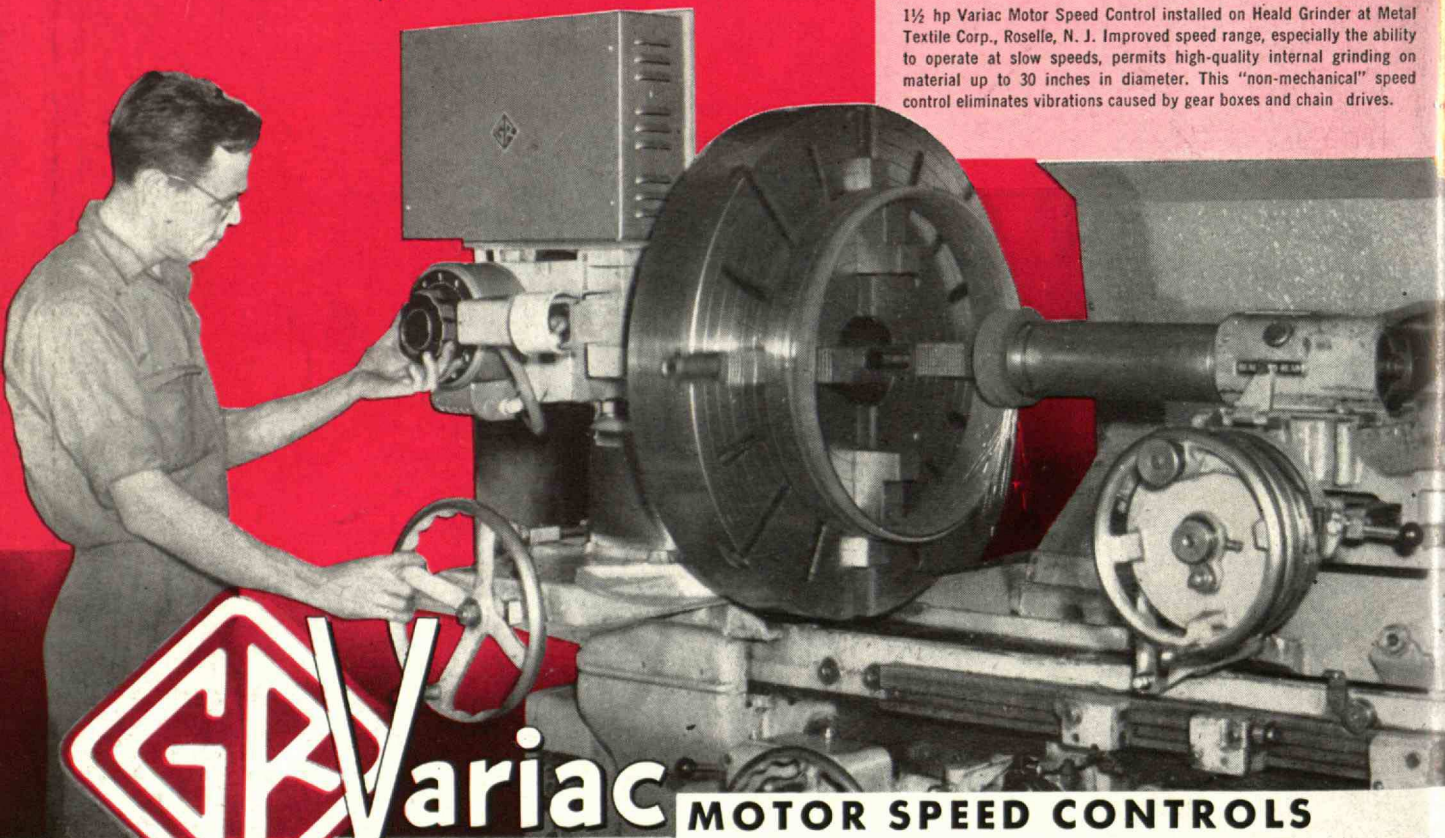


Type 1700-B
for 1/4 and 1/3 hp motors
\$180

Type 1705-B
for 1½ hp motors
\$380



1½ hp Variac Motor Speed Control installed on Heald Grinder at Metal Textile Corp., Roselle, N. J. Improved speed range, especially the ability to operate at slow speeds, permits high-quality internal grinding on material up to 30 inches in diameter. This "non-mechanical" speed control eliminates vibrations caused by gear boxes and chain drives.



Variac

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